

COAL AGE

The Only National Paper Devoted to Coal Mining and Coal Marketing

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Tell the Miners the Whole Truth

SOME time between now and April, 1922, the coal operators representing some 70 per cent of the bituminous output and all of the Pennsylvania anthracite will be face to face with representatives of the United Mine Workers to discuss a new wage scale. No one, not deaf, dumb and blind, but knows that the operators, whatever may be their personal feeling or inclination, will be forced by the inexorable trend of events to ask the miners to take a reduction in wages. Whether the time of that asking be next March or April or sooner no one knows, but there is now no widespread disposition to anticipate the termination of the contract at the end of the first quarter of 1922.

It is too much to expect that the miners' leaders will welcome next spring any more than now the suggestion that they sign up, for their constituents, a contract for lower wages. Where the operators of union mines have, as in central Pennsylvania, made a move toward discussion of a reduction in the union scale, being so driven by the competition of coal from non-union mines, where wages have recently been lowered, the union leaders have repulsed the overtures. In fact these leaders have more than rejected the idea of a conference on wages at this time and have begun a campaign of "education" among their members with the idea of strengthening the opposition to adjustment of wages of coal mine labor.

According to reports the president of the local union in central Pennsylvania recently issued a pamphlet setting forth the miners' program with respect to future relations of union labor with the coal-mining industry. This program, which reiterates the now familiar demand for nationalization of the mines, the six-hour day and the five-day week, is both a challenge to the miners to rally to its support and to the operators to prepare to meet such demands.

The way to get this program advocated by the pamphlet, according to one report, is a campaign of education. By this is meant the issuance of pamphlets, workers' education, establishment of a labor newspaper, and research into facts. Workers are urged to form groups in their local unions to discuss nationalization and other topics. The checkweighman on the job is urged to distribute the pamphlets, as are the presidents and secretaries of the locals. "If the rank and file know the facts and how to act as a unit in changing conditions they can obtain every just and reasonable demand," says the pamphlet.

The pamphlet is further reported to state that "Our challenge to the present basis of the coal industry is this: The private ownership of the great natural resource of coal is morally indefensible and economically unsound. It means that coal is mined for the profit of a comparatively few 'owners,' instead of for the use and service of the public. It results in chronic mismanagement of the mines. It results in exploitation of the

miner, through overwork, underpay, inadequate safeguards, bad housing, accidents, and then long and unnecessary periods of enforced idleness. It results in unemployment when millions of consumers need coal. It results in high prices for coal when democratic methods of production would reduce the cost, increase the production, and give a good American life to the miners."

We cannot but commend the officers of the United Mine Workers for their forehandedness. They are preparing well in advance for an argument that, doubtless, will be very much against them. If the doctrine they are spreading be acceptable to the operators, then it should be allowed to go uncontroverted; if it be false teaching or unsound economics, then the operators are false to their trust in letting it pass without the maximum effort to reach the men, not the leaders, who are wise indeed already with those things the operators believe to be the facts.

It is hardly necessary to point out that facts collected by the Government will be more efficacious in meeting the arguments of the union officials than those assembled in any other way. Less than two years ago the operators, unprepared with facts, saw oratory fail to effect a peaceful settlement. A day of reckoning is coming and the public wants no repetition of the strike of 1919.

Byproduct Coke

IN SHUTTING DOWN all its beehive coke ovens in the Connellsville region, the H. C. Frick company has definitely established the old wasteful type of coke making in the stand-by class. Until the war the Steel Corporation depended almost entirely on coke from the Connellsville region, but changed conditions with respect to the market for byproducts, particularly the light oils, furnished the incentive for the erection of the largest byproduct coke plant in the United States at Clairton, and now this plant is being operated for the coke supply of the corporation's furnaces, and the beehive ovens are indefinitely cold. What is true of the largest iron producer is true also of the lesser companies, so that today we find beehive coke production at a rate but one-sixth that of last year, when beehive coke was but 40 per cent of the total. At the present rate it would appear that when the record for 1921 is cast up, beehive coke will have made a very poor showing indeed,—perhaps but 10 per cent of the country's total.

From 1893, when the first new-type ovens were started in this country, to 1914 the proportion of coke from the byproduct ovens increased to but 32.5 per cent—in 1901 it was 5.4, in 1910 it was 17.1, in 1912 it was 25.3 per cent. Early in 1915 the Allies placed large orders in this country for light oils for munitions manufacture and impetus was given the byproduct industry, which, however, did not reach its maximum until we entered the war, in 1917. The proportion of byproduct coke was but 33.8 per cent in 1915, 35 in 1916 and 40.4

in 1917. In 1918 it had increased to 46 per cent and was 60 per cent in 1920.

What this means in conservation is indicated by the figures of byproducts recovered per ton of coal charged into the retort ovens. In 1919 with each ton of coal made into coke in byproduct ovens there was recovered 20.8 pounds of ammonium sulphate, 8.1 gallons of tar, 2.7 gallons of crude light oil and 11,600 cu.ft. of surplus gas. Expressed in totals, this means, according to preliminary estimates by the Geological Survey, that in 1920 through the use of byproduct ovens the recovery of ammonium sulphate or its equivalent in other forms of ammonia was 458,500 net tons, and there also was saved 357,000,000 gallons of tar, 119,000,000 gallons of light oil and 511,400,000 cu.ft. of surplus gas.

The passing of beehive ovens, hastened by the war, means more than the extinction of a wasteful type of coal carbonization—it means the passing of an industry from the hands of coal producers to the hands of coke consumers and gas producers. The producers of beehive coke must now turn shippers of byproduct coal. The natural semi-monopoly of the Connellsville region is gone because with retort ovens the coke makers with plants at the points of coke consumption can pick and choose their coal and the producers of coal in the Connellsville region must compete with other coal fields for the business of these ovens. Instead of a beehive coke industry we have a new byproduct coal industry, with the field greatly widened and more entrants for the business.

One heritage the beehive coke industry still holds, it appears, and that is freight rates giving Connellsville coke an advantage over coal from the same mines shipped to byproduct ovens and then shipped out as coke. This will be corrected in time to the advantage of the producer of byproduct coal and the consumer of retort coke. No obstacle should be permitted to stand in the way of the complete development of an industry that in producing 25,000,000 tons of coke valued at \$164,000,000, as in 1919, also saved byproducts valued at nearly \$64,000,000, as against a process that burns or wastes these valuable tars, oils, gas and fertilizer.

Without and Within

MINING plants like that described in this week's issue provoke thought as to what might happen if as much scheming were bestowed on the underground workings as is lavished on the landing, the shaft and the upper works of modern mines. Large as are the advantages of suitable surface equipments, the economies to be obtained from proper underground layout and methods would be far greater. The big problem in mining is mining. That does not mean so much that we need new and better machinery but that we must learn more efficient ways of using what we have. In this progress might be far greater than it has yet been. The more surface equipment is elaborated, the more important it is to provide it with a life made longer by complete extraction. Certainly, other things being equal, it is better to double the production per acre than to double the acreage. To mine every ton in the ground would decrease the coal land to be bought, would lower taxes, decrease haulage costs, lighten the cost of timbering and reduce the amount spent on rails, copper and substations.

Whether it would pay in Middle-West mines to obtain those economies at a considerable expense for sand

filling is questionable. So far as is known hydraulic backfilling has not been tried in Illinois, where the plant described in the article referred to is being erected. Perhaps the cheaper plan would be to buy both mineral and surface, to completely extract the coal and sell the surface as fast as extraction is completed, but with the price of coal in the ground as low as it is, the price of farm land as high as it is and the progress of extraction as protracted as it is, the profit would have to come not from the saving effected in coal so much as in the cheapening of production by the use of a substitute for the costly room-and-pillar mining.

Works Steadily But Does Not Work Long

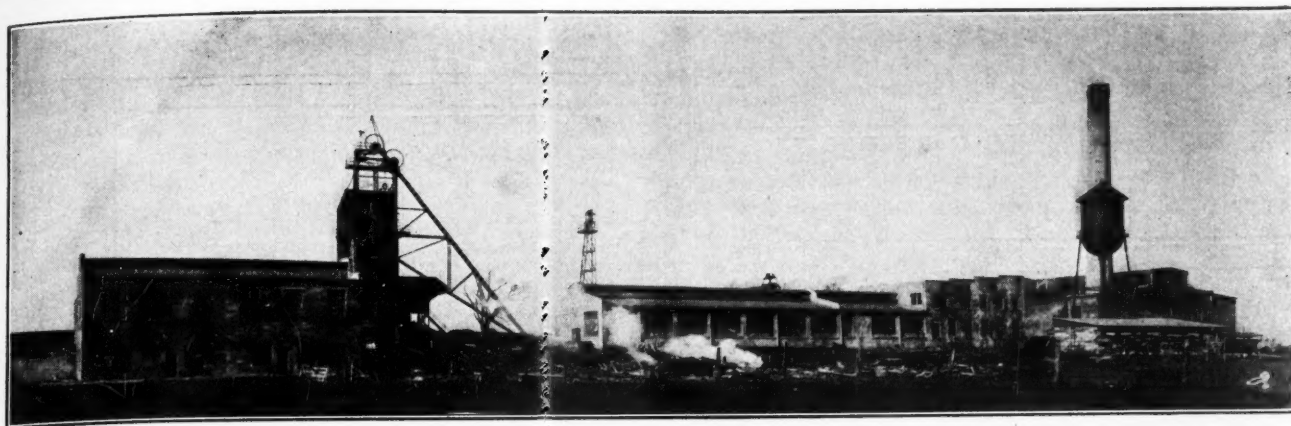
OLDEST and most essential of the machinery in mines is the mine pump. A few drift mines might continue to work without pumps, but only with difficulty and about 50 per cent strong. A few shaft mines also in dry to arid regions might successfully operate without voiding the small amount of water entering their workings. But on the whole little could be done were an attempt made to work a coal mine without mechanical provision for the removal of water.

The old mines in China and the earlier mines in the Georges Creek regions were worked till water got the better of them and they had to be closed down. A little more than a century ago Great Britain's coal mines were saved to that country by a providential discovery of mechanical pumping. The time had about come when British mines had reached their limit and would soon have had, one and all, to close down. Thereby the steam pump prevented a premature suspension of the nation's industries.

In the British strike now in progress, the importance of the pump again became painfully apparent to the public, which, however, had fully realized it in the strike that preceded the present suspension. Whether coal came from the pits or stayed there, the water must be pumped out. In France the Germans could do no greater harm than to flood the mines and in America the importance of pumping is made evident by the fact that the contracts between the mine workers and operators make it obligatory to the union to see that the pumps are kept in operation even though a strike suspend the production of coal.

Whether the mine works or not the pumps must run. It is true that they may not pump all the time. In case of a complete closure small dips in the mines may be allowed to fill up, and even in busy plants stand-by pumps may be kept idle for weeks, even months, at a time, but in nearly every mine an essential requirement is that the main pumps run every day if not all day, and the small pumps also must run if the mine is to work even intermittently. Regardless of operation or of idleness occasionally or for long periods certain pumps must do this diurnal duty.

It is an unhappy fate that this machine, which of all others is most essential, should suffer most from the condition under which it works—the acid and the grit. Perhaps only the chemical industry gives pumps severer service, but that industry uses few and small pumps for its chemicals and consequently does not need efficient machinery and can use pumps made of silicon iron, which so far has been considered too fragile a material for use in coal mines. However, the pumping problem, as far as small pumps are concerned, will be greatly eased when longwall methods are adopted.



SURFACE PLANT OF DONK BROTHERS COAL & COKE CO.'S NO. 4 MINE, EDWARDSVILLE, MADISON COUNTY, ILL.

Donk Bros.' No. 4 Mine Embodies Many Needed Reforms In Bottom and Surface Coal-Handling Methods

Planned for an Ultimate Capacity of 6,000 Tons Daily, It
Will Produce Only About 2,000 Tons Per Day Through the
Airshaft Until Development Warrants Further Expenditure

By ANDREWS ALLEN
Chicago, Ill.

MANY interesting and novel features are embodied in the new No. 4 plant of the Donk Brothers Coal & Coke Co., at Edwardsville, Ill. This operation is situated in a tract of about 4,500 acres, the coal bed being from 5 to 7 ft. thick and lying about 200 ft. beneath the surface. The three

mines already operated by this company were all sunk about the year 1900. Decision was made to open this new mine in order that from it the existing tonnage might be maintained and increased as desired. Plans for the new operation were started in the summer of 1918, and although the country was still at war and

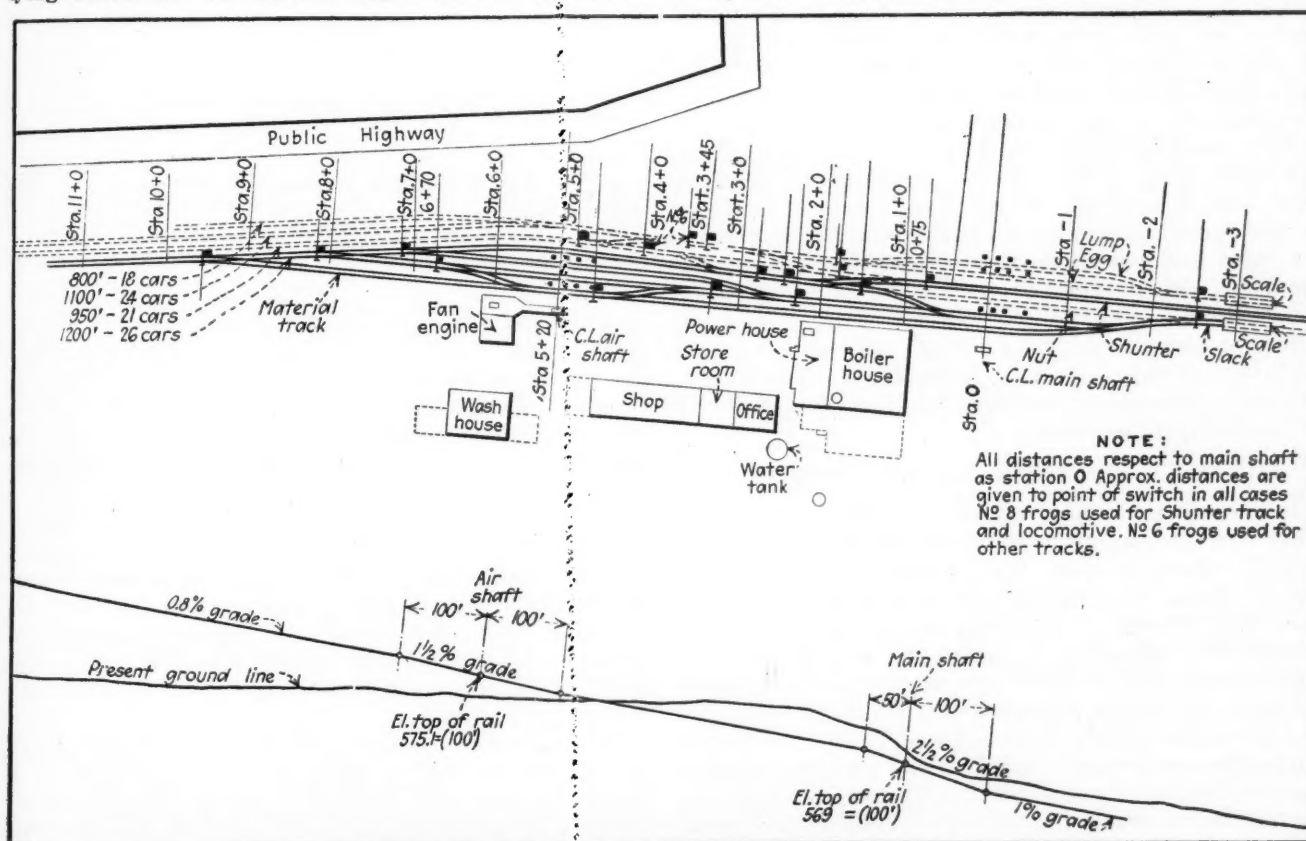


FIG. 1. SHOWING PRESENT AND PROPOSED MINE TRACKS AND BUILDINGS

The distances along the track are from the main shaft as zero, the airshaft, which at present has the only headframe constructed, being at Sta. 5+20. The grades are increased under the tipples so as to facilitate handling past the chutes. With the tracks outlined fully constructed and with the other extensions planned, completely built and in operation, a tonnage of 6,000 per eight-hour day can confidently be expected.

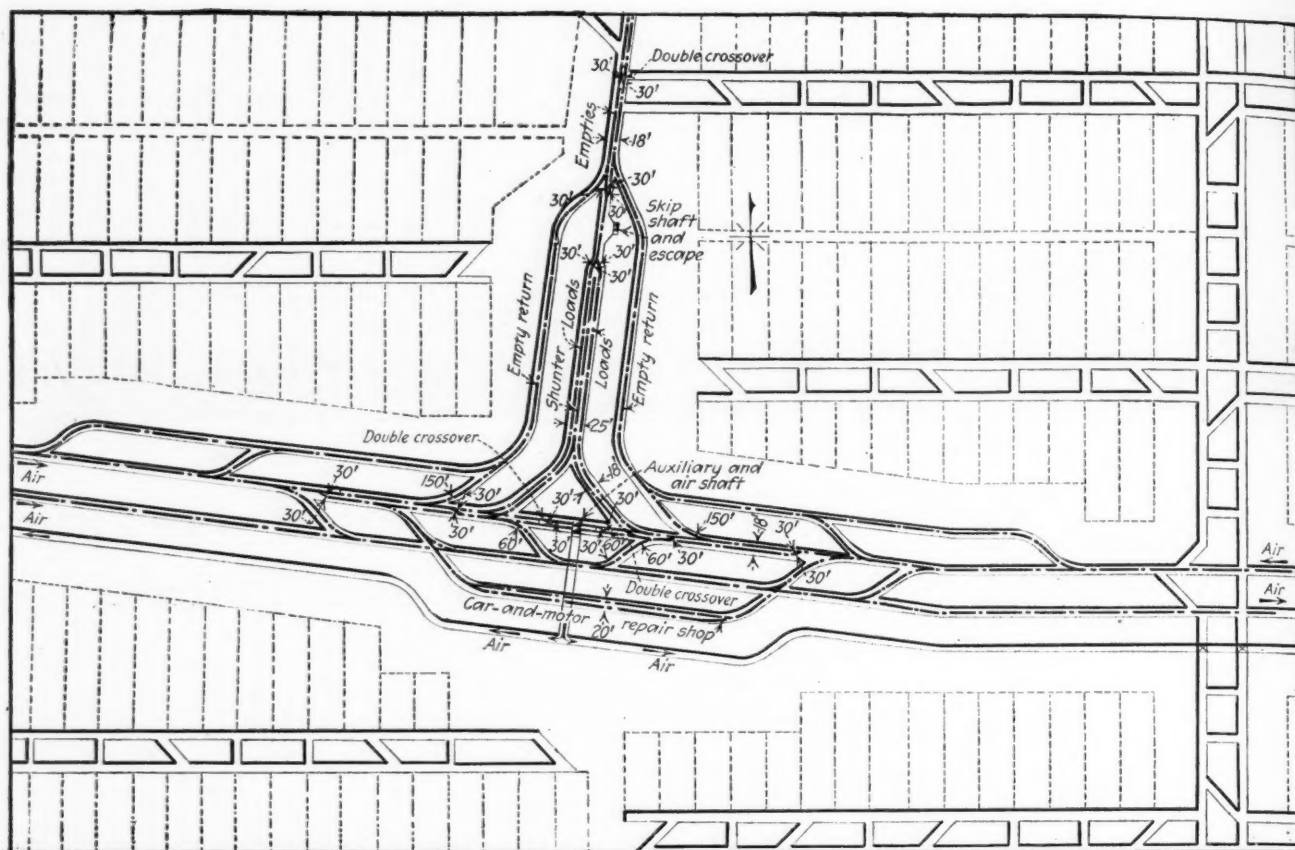


FIG. 2. SHAFT BOTTOM LAID OUT FOR HOISTING BY TWO SHAFTS

It will be seen there is only one track which pass up to and across the shaft, near the main or skip shaft, and it passes by and parallel to the long side of the shaft, whereas at the other shaft, which accommodates two cages, are two tracks which pass up to and across the shaft, when the cages are at the lower landing. The layout with a skip shaft is quite different from that when the shaft is fitted with cages. For the most part the figures given are the radii of the curves shown, but when arrows are placed on both sides of a roadway the figure is to be interpreted as the width of the heading thus marked. Thus certain roadways are 25 ft. wide.

materials and labor were difficult to obtain it was decided to begin construction in a limited way so as to obtain a small output at minimum cost. At the same time a future development was planned on a scale warranted to produce at least 6,000 tons per day.

It is the intention to hoist coal in 8-ton skips from the main shaft when all the developments planned have been completed. It has been decided, however, to postpone this portion of the operation, developing the mine and operating it for some years from the airshaft. This program presents many advantages. In the first place a large part of the plant investment will be postponed until the output and earnings warrant the necessary outlay. Secondly, it was thought that prices of material and possibly rates of labor would be more favorable later.

RELY ON AIRSHAFT TILL TONNAGE IS HEAVIER

In an orderly and progressive development of the mine it would not be possible to obtain economically a daily output of more than 2,000 to 3,000 tons for two or three years at the least, nor to obtain the maximum tonnage in less than four or five years. It was decided, therefore, to equip the airshaft for producing from 2,000 to 2,500 tons per day and to prepare the coal over shaker screens. By this means the prevailing market prices for sized coal could be obtained during the development period. This program entailed the construction of the airshaft with two hoisting compartments adjoining the airway instead of the usual passages for single cage and counterweight.

This plan also necessitated the use of some means for dumping solid-end cars at this shaft, because, as

already stated, the main hoisting shaft would later be equipped with skips and a rotary dump, which arrangement would fit in well with cars of this type. The stairway for emergency egress was placed at the main shaft. This affords two independent means of exit from the mine and leaves no legal or practical reasons for the immediate installation of a hoist at the main shaft.

TWO SHAFT BOTTOMS NOT FOUND NECESSARY

The first part of the development and construction program has now been completed and the mine is producing from 1,500 to 2,000 tons of prepared coal per day from the airshaft. Plans are in preparation for the second construction program, which will involve the main bottom, with its rotary dump and skip, the main tippie and hoist and an enlargement of the power plant.

The general layout of the plant is shown in Fig. 1, and a general view is presented in the frontispiece. The two shafts were placed alongside the railway tracks and the bottom arranged so that coal can be brought to either with equal facility. The additional bottom development necessary to permit hoisting at the airshaft is almost negligible, as will be seen from the bottom plan, Fig. 2.

The contours of the ground favored a gravity layout, but it was decided to combine the advantages of a shunter system with those of a gravity yard by using a centrally-located shunter track as a run-around. The empties, therefore, will be pushed through the main tippie, and the switch engine, in order to move or assist in the movement of cars, will be able to pass

from end to end of the yard at will or to proceed upon any track desired. The power plant is located between the shafts. The boilers are in a double row at right angles to the tracks, so as to render possible unlimited expansion in case this plant should be made into a central station.

NIGHT HOIST ENGINEERS ATTEND GENERATORS

The hoisting engine serving the airshaft is placed in the west end of the power house, the drum being 308 ft. from the shaft. To prevent too much sag in the rope this member is carried over idler stands to the tippie. The hoisting engineer, located in the power house, will attend to the generators during the night shift, thus rendering unnecessary the services of two men, as the airshaft and power house operate twenty-four hours per day.

The shop and store-room building, with an office in the second story, is located just south of the power house, 100 ft. from the first track and convenient to the airshaft. The washhouse has been built a little more than 100 ft. to the east of the airshaft and the fan lies to the south of it and alongside the railroad tracks.

All the buildings are of uniform style, being built of hollow "Natco" shale tile and covered with gunite. The sash are of steel throughout, and the roofs of gypsum "pyrobar" tile with Barrett specification composition. The buildings outside the "fire limit" are covered with 3-in. sheathing protected with gunite.

The material yard lies between the shop and the tracks. It is served by an unloading crane, extending over the material track and built as a part of one of the idler stands. Timber, rails and props will be stored immediately south of the fan and will be unloaded from cars on the high track. When the chutes are raised a locomotive can pass anywhere under the tippie. Water is obtained from a pond of which the railroad fill forms one side. It is intended to supplement this limited supply by additional storage or by a pipe line from the Mississippi River bottoms.

The main dumping station at the bottom as planned but not yet installed is shown in Fig. 3. This work is part of the future construction program, but is shown here as indicating the scheme of development. When the work projected is completed rock and a certain amount of coal for inspection and docking will still be hoisted from the airshaft.

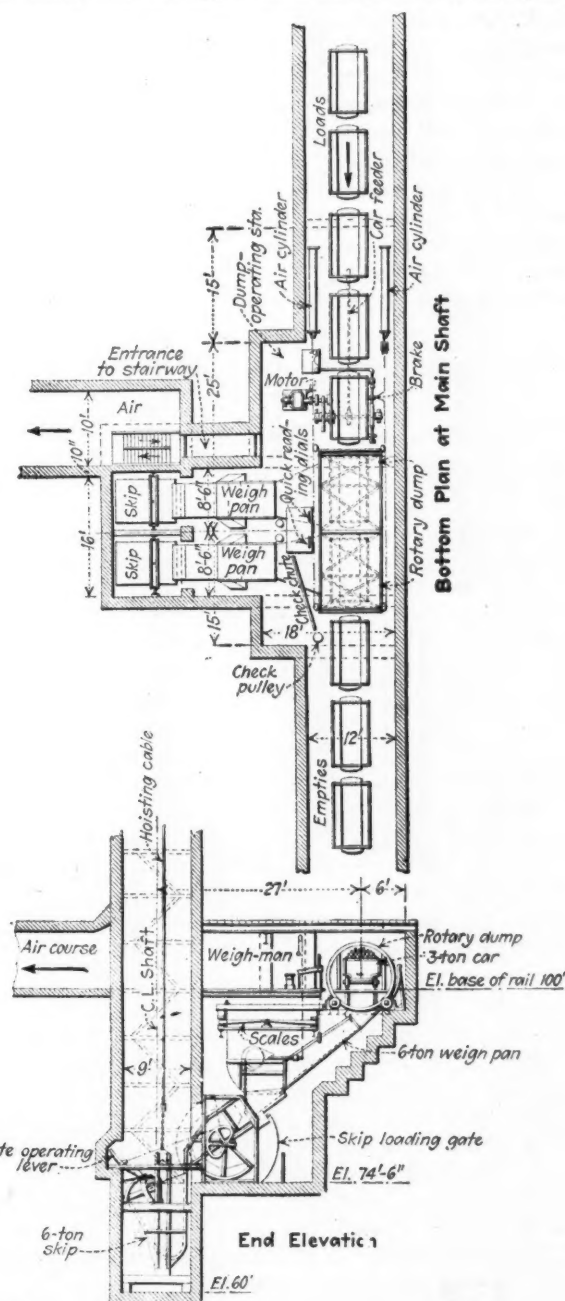
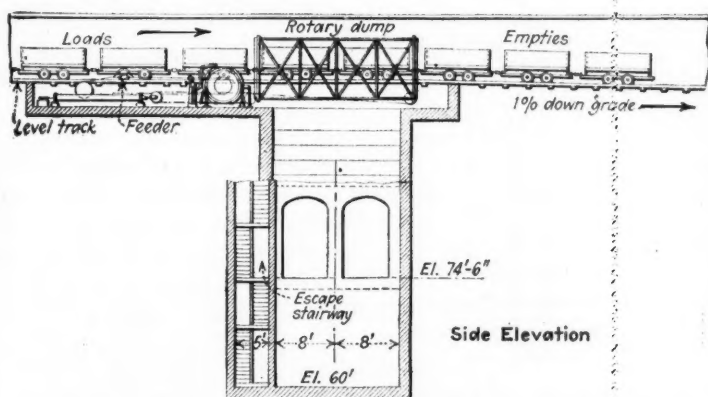


FIG. 3. DETAILS OF DUMP ULTIMATELY TO BE INSTALLED AT THE MAIN SHAFT WHEN TONNAGE IS LARGE ENOUGH TO JUSTIFY CONSTRUCTION

A car feeder delivers the coal to a two-car rotary dump. The discharge from each is then weighed by two scales with quick-reading dials and is dumped from the pocket by opening a gate into the skip below. Each pocket is capable of holding two carloads, or six tons, which is the capacity of the skip. It will be noted that the main road adjacent to the skip shaft is only 12 ft. wide. It is, however, fed by a double-track road 25 ft. in width.

Both shafts are lined with reinforced concrete throughout and are provided with steel buntons. The main shaft will be fitted with steel guides. These are shown in detail in Figs. 4 and 5. The channel wall plates, together with the buntons, were placed and accurately lined up during sinking and were used to support the forms. Curbing was employed only while passing through the soft material near the surface, the concrete being poured in sections as sinking advanced.

The airshaft tippie is a complete little installation arranged with shaker screens, mounted on pendulum hangers and provided with center-crank drive, for making lump, egg or nut and slack on three tracks. The lump coal is passed over a pivoted loading boom and picking table, and the egg over a hinged and telescoping

chute. The slack is passed through a bin and large gate which also serves as a run-of-mine chute operated without running the screens. Fig. 6 shows the airshaft tippie. It will be noted that the tower is of the familiar Allen & Garcia type concreted around the rear and part of the sides, to protect the steel, give added stability and prevent the scattering of coal.

Rock is handled by means of a flygate in the chute. This opens into a bin holding a carload of this material. For the present this refuse is being used to extend the empty tracks and to fill the yard. It is removed in a larry running on a narrow-gage track between the slack track and the shaft. The direction of the chute can be altered, however, so that it can deliver to a car on the slack track. As has been mentioned, it was necessary, in order to carry out the main design of the plant, to devise some means for dumping a gateless mine car without removing it from the cage. In previous plants of this type

it had always been necessary to take the cars off the cage at the upper landing, discharge their contents in a rotary dump and then return them to the cage. This meant small capacity, high first cost and higher operating expense. This method was out of the question here for the reason that it was desired to utilize the airshaft for hoisting coal for two or three years. Accordingly an overturning cage was designed and installed.

This cage revolves the car through an angle of 135 deg. instead of through the customary 45 deg. It operates approximately as easily as an ordinary cage, although a little slower, because of its longer movement. During its operation, now extending over more than a year, it has given no trouble and few improvements are contemplated in the next installation. Dumping is effected by means of a long overhead circle which revolves the cage until it rests on two fixed rollers over which it moves during the latter part of the cycle. The coal sustains no more drop than it does from an ordinary cage and any spillage is taken care of by a spill gate operated by the cage. This follows the movement of the platform during the dumping process.

The type of car used is shown in Fig. 10. As may be seen, these cars are of wood, heavily braced with steel and equipped with lugs for use in a chain car haul feeder to be installed at the main dump later on. The detail of particular interest is the cast-steel bumper and drawhead which was developed especially for this job. The steel bumper is of ordinary type, but at one end of the car it terminates in a round shaft, held by a heavy spring which operates both in pulling and pushing the car. This shaft also swivels so that cars can be dumped in trips without uncoupling. A special centering device is used so that the drawhead will resume a truly horizontal position after dumping. The drawbar is split so as to render possible a low mounting of the drawhead apparatus.

The drawhead at the other end of the car is fixed. This draft rigging has proven highly satisfactory in operation. The springs effectively cushion the impact of starting and stopping, thus

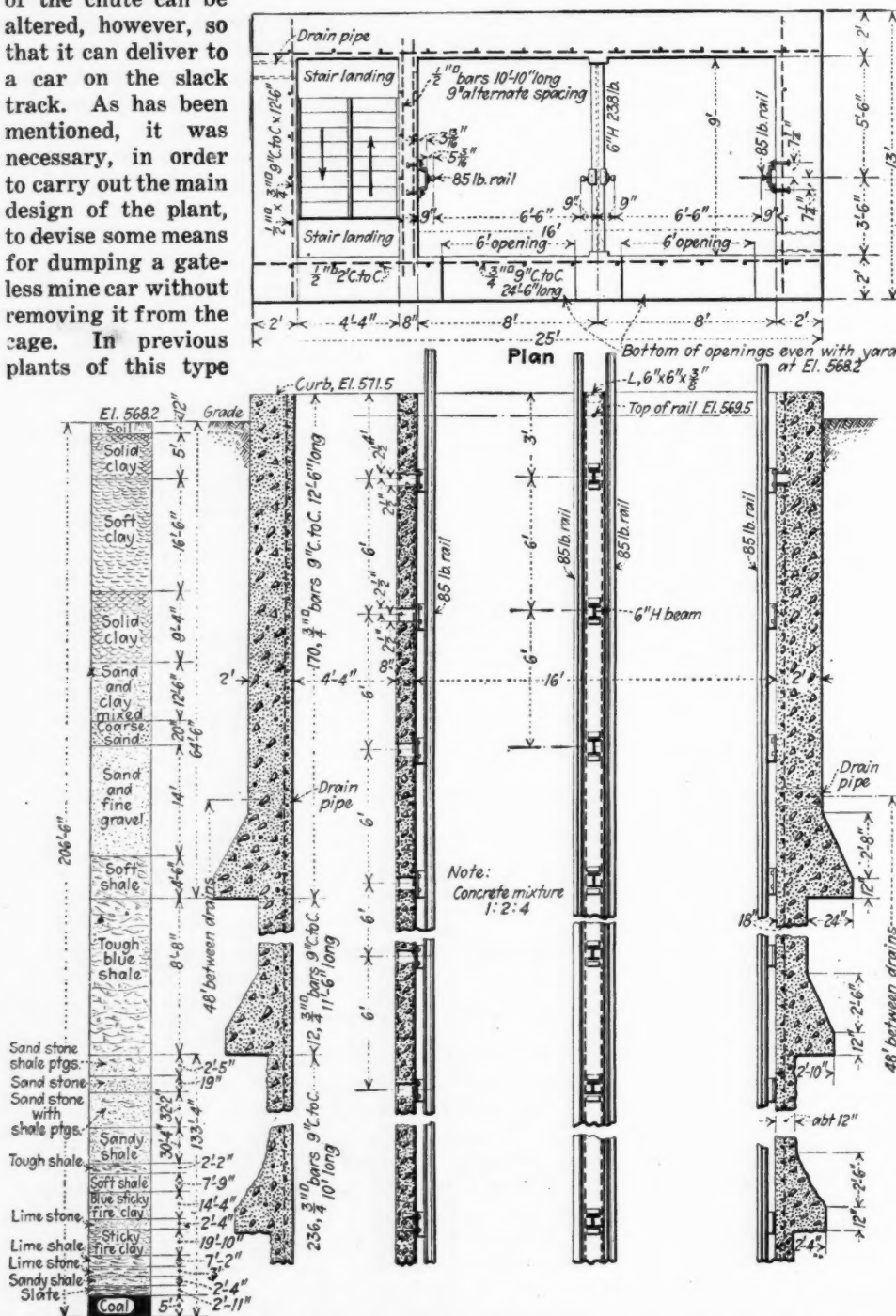


FIG. 4. PLAN AND CROSS-SECTION OF MAIN SHAFT AND A COLUMNAR SECTION OF THE MEASURE ENCOUNTERED IN SINKING IT

This drawing is not drawn to scale. It will be noted that in a cover of 206 1/2 ft. as much as 64 1/2 ft. is dead load—clay, loose sand and soft shale. The presence of overburden almost destitute of cohesion is the cause of much trouble in the shaft mines of Illinois.

relieving both the motor and the hitchings. Coupling with a single link is easy and attended by much less hazard than with any other sort of non-automatic hitching. The newest cars, as shown in this illustration, are equipped with Lincoln trucks.

In the boiler house, boilers will be set in two rows at right angles to the railroad tracks with a wide firing aisle between. Those already placed are equipped with "Harrington" stokers and Engineer Co. "balanced draft." The Harrington stoker permits the use of the very finest of coal without loss. The drive chain is below the grate bars and entirely protected from the fire. The grate is driven by a worm gear and is so connected with the dampers and the forced-draft fan as to pick up a varying boiler load automatically and maintain a steady steam pressure. A concrete stack 145 ft. high has been erected, and the boilers can easily be operated at from 200 to 250 per cent of their rating without producing smoke.

Fuel is fed to the stokers from two overhead bins of ample capacity which are filled by a "refuse chain conveyor" and elevator from a pit beside the track. Coal can be dropped down track from the airshaft tippie and dumped into this pit. It will eventually be fed from the main tippie by means of a conveyor.

Ashes are removed by a steam-jet conveyor to a concrete bin over the first track. The boiler installation at present consists of two 400-hp. batteries, with provision for two additional similar units connected to the same stack. Each of these batteries is made up of two ordinary 200-hp. return-tubular boilers in an extremely high suspension setting over one stoker. The return-tubular boiler was selected in preference to the water-tube type on account of its large water capacity. This makes this boiler especially suitable for hoisting plants which are subject to sudden and violent fluctuations of steam demand. Pressure is maintained at 150 lb., which is about as high as can be carried with boilers of this type and size.

Fig. 8 shows the boiler plant as at present installed. This picture is taken from the point where the second stack will be located should it ever be necessary to

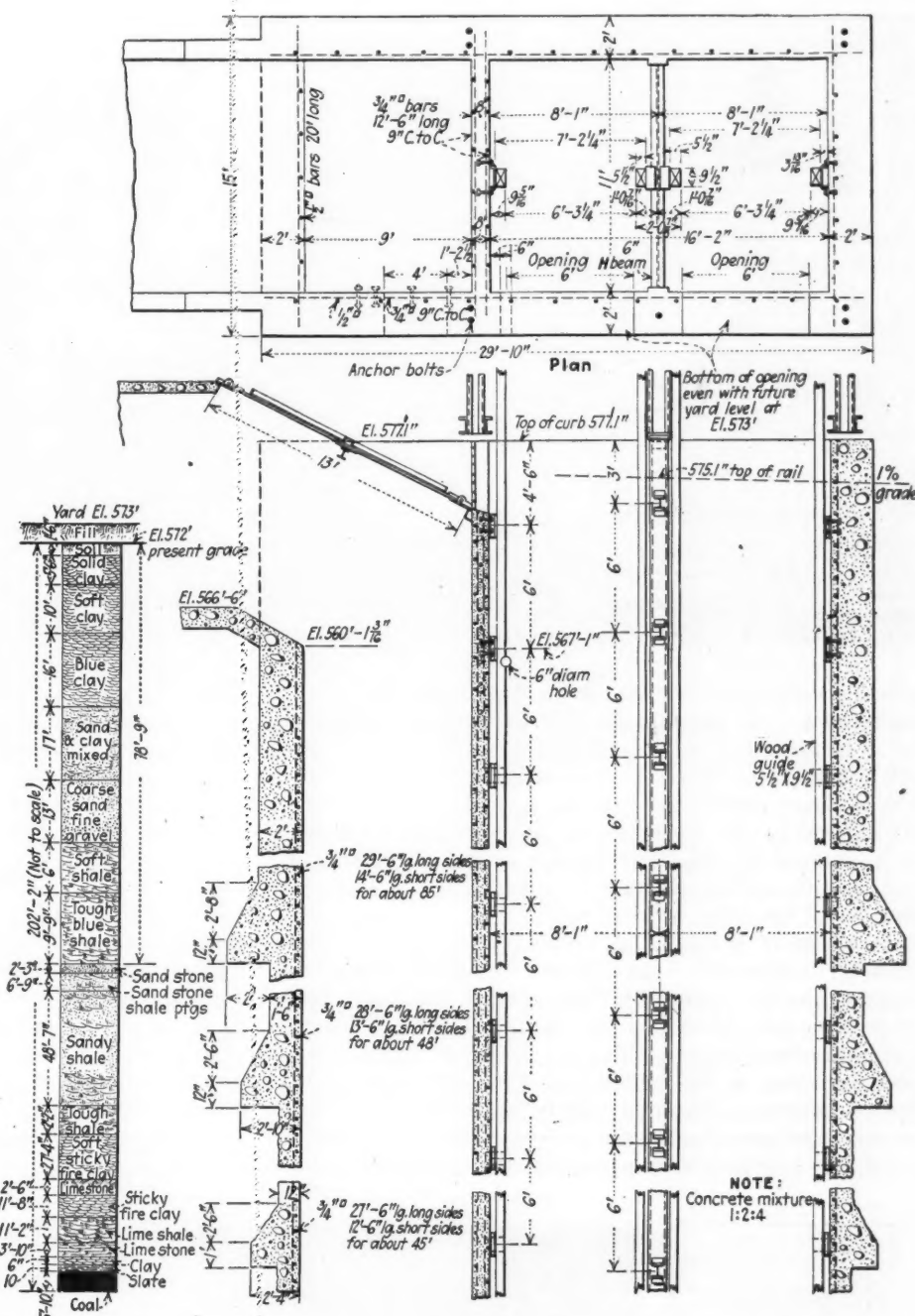


FIG. 5. PLAN AND CROSS-SECTION OF AIRSHAFT AND COLUMNAR SECTION OF MEASURE OVERLYING COAL

The left compartment is for air and is sealed all the way up. Note the explosion doors at the head of this compartment. The other two are furnished with wood guides, as they are used for hoisting self-dumping cages.

more than double the present installation. Water as generally found in this section is extremely hard and quite muddy. At this plant it is filtered and softened by the "Permutit system," the apparatus for which is located in the end of the boiler house next to the track. The main hoisting engine will be installed in the north-west corner of the boiler house, which will be partitioned off for the purpose.

GENERATORS ARE DRIVEN BY UNIFLOW ENGINE

The only power units at present installed are a 50-kw. direct-current generator and a 450-kva. 2,300-volt alternator, direct-connected to a Chuse uniflow engine. These are shown in Fig. 9. The direct-current unit was purchased for use during construction but was

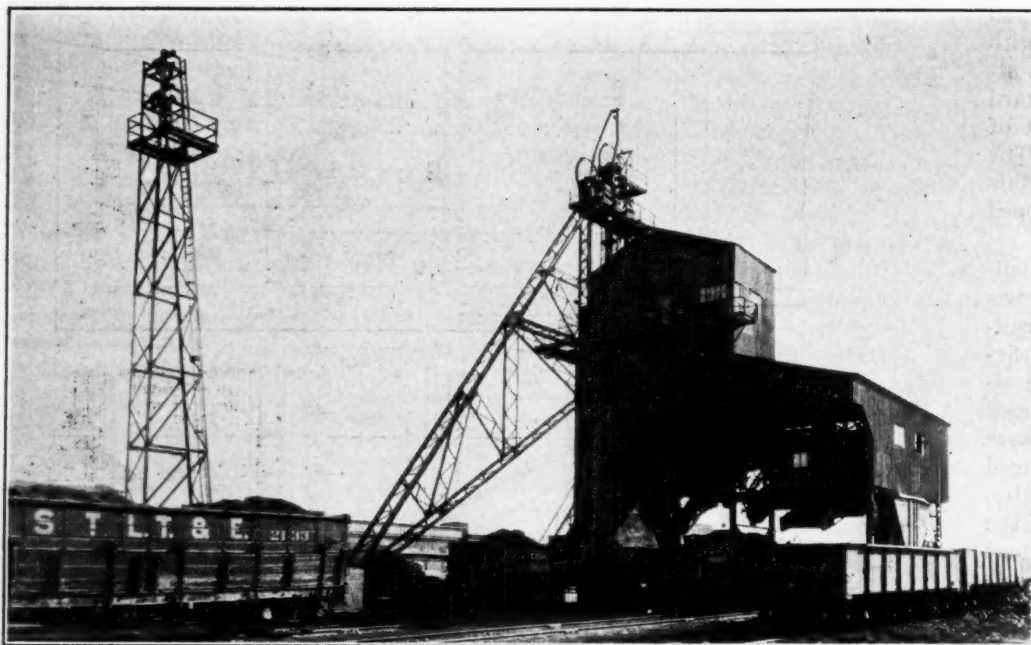


FIG. 6

Airshaft Tippie

The headframe is concreted around the rear and part of the sides so as to protect the steel, add to stability and prevent the scattering of coal. Note the idler stand supporting the hoisting rope. The drum is 308 ft. from the shaft and the idler is needed to prevent the rope from sagging.

given a permanent setting, so that it might carry the night load. All machines above ground are operated by alternating-current motors at 240 volts and all units below ground by direct current at 250-275 volts. One 200-kw. motor-generator set is located in the power house, and as the workings of the mine are extended it is planned to run high-tension cables underground and install additional motor generators in various sections of the mine as required.

This power plant is at present operated non-condensing, but provisions have been made for running the uniflow engine condensing and adding turbine units when they are needed. The first will be a 750-kva. mixed-pressure turbine with a regenerator. A space has been provided in the boiler house for this unit. The second additional machine will be high-pressure. The switchboard provides frames and buses for these future units, but only necessary panels are now installed.

The basement under the power-house floor is arranged for the installation of condensers. It now contains only a small air compressor and the levers and switches of the switchboard. The whole power house is spanned by a 10-ton traveling hand crane for use in handling the machinery.

MULTIVANE UNDERSHOT FAN VENTILATES MINE

The fan is a Jeffrey 12 x 5-ft. multivane undershot machine and is shown with its setting in Fig. 12. The setting, including the evasé chimney, is built of reinforced concrete, only the reversing doors and dampers being of steel. Both drives—for two are provided—are placed on the same side. An engine is belted to a large pulley on a stub shaft connected to the fan by means of a jaw clutch.

The main drive, however, will be a motor, belted to another large pulley mounted on a quill shaft supported

FIG. 7

Hanger Room

Hanger room is high and well ventilated. Light enters from the monitor, or clerestory, in the roof and the windows on one side. A commodious first-aid room and a bosses' bathroom with lockers also are part of this building. The basement is of flat-slab construction with walls of reinforced concrete, but this part of the structure is of gunited tile.



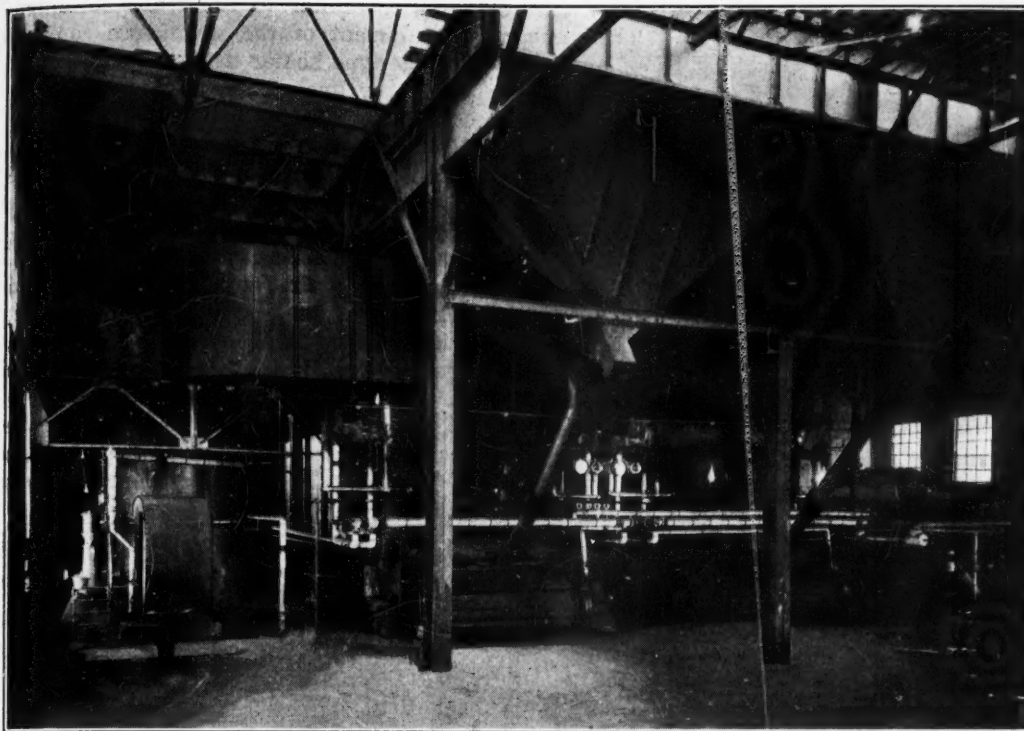


FIG. 8

Boiler Room

Boilers have stokers which will use economically the finest of coal and a balanced draft that delivers air to meet the needs of the fire. Return tubular boilers are used. Though not rapidly responsive when first fired up, they hold so much water that when under way they will respond to sudden and violent fluctuations in the demand for steam.

in two bearings and thrown into action by means of another jaw clutch. A small 9 x 12-in. slide-valve engine is now operating the fan, but it is planned soon to install a 200-hp. variable-speed motor, after which the engine will be retained as an auxiliary drive only.

The shop is of "daylight" construction. Its interior is shown in Fig. 11, while its exterior may be seen in the frontispiece. It has a full equipment of machine tools as well as room for four forges. All drives are of the overhead type. Material is handled through the shop on an industrial track extending from end to end and also through the storeroom. This is connected by turntables with tracks coming in from the yard through the side doors. Work is handled

over the large tools at the north end of the shop by means of a 5-ton hand crane carried on the bottom chord of two trusses. Trolleys with chain hoists can be installed on the bottom chords of the other trusses wherever needed.

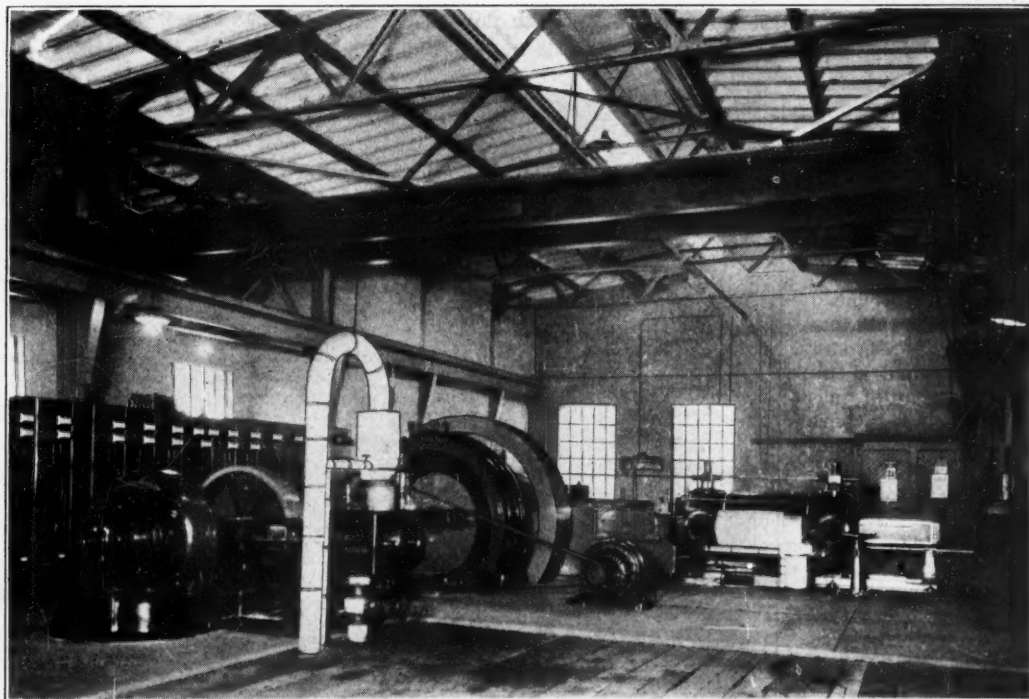
SEVERAL SHOPS AND OFFICES UNDER ONE ROOF

The adjoining section of the building is separated from the machine shop by a fire wall. Here are located the electrical shop, the storekeeper's office and the storage space for shelf materials. The next section forms the storeroom proper and is under the office. It is used for large and bulky materials and supplies. A track from the storage yard near the unloading

FIG. 9

Power-House

On the right a uniflow engine, now operating non-condensing, and on the left a 50-kw. direct-current generator provided during construction and now used for the night load. Between them a 450-kva. 2,300-volt alternator direct-connected to the engine. A 10-ton traveling hand crane traverses the building. A 750-kva. mixed-pressure turbine will be added later.



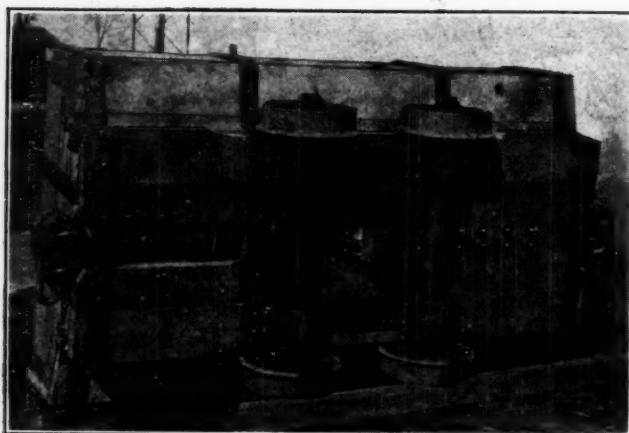


FIG. 10. MINE CAR HAS SPRING DRAFT RIGGING

Wood mine car heavily braced with steel and equipped with a lug midway between axles for use in a chain car-haul feeder which will be later installed. The steel bumper at one end has a heavy spring which cushions the blow when the cars come together and gives the necessary play to make it easy to start a trip. The drawhead swivels so that the car can be dumped without uncoupling.

crane runs directly across this room and is connected by turntables with that traversing the entire building.

The office is situated upstairs, but a pay office with vestibule is located in the northeast corner of the store-room. This pay office is accessible only from the general office above by means of a private stairway. The upper story here contains a large accounting room as well as an engineer's office, with a vault for each; a superintendent's office and a private office, also lavatories for men and women.

The washhouse is shown in Fig. 13 and the interior of the hanger room in Fig. 7. This building at present contains accommodations for 400 men. The hanger room is high, well lighted and adequately ventilated. The shower room has a capacity sufficient for the ultimate requirements of the mine. This building also contains a commodious first-aid room and a bosses' bathroom with lockers.

This washhouse was built on a piece of low ground which was afterward filled in. Advantage was taken of this fact to put in a basement for use as a meeting and lecture room. The first floor is of flat-slab construction with walls of reinforced concrete. The upper story

is of tile and gunite, similar to the other buildings. The mechanical equipment of the washhouse consists of an inclosed storage-type heater using either exhaust from the fan engine or live steam, as necessity may require.

All steam lines are run in concrete conduits which extend from the power house through the shops to the washhouse and fan building. All electric wires are carried in conduits underground, and the yard is thoroughly tile-drained and cinder-filled.

Water for all purposes is first softened, then pumped into a 40,000-gallon steel tank at a 50-ft. elevation. Thence it runs by gravity to the heater, washhouse, etc. A high-pressure fire line also is installed, with plugs and hose at convenient points.

Provision for future needs and expansion was one of the main considerations in laying out the plant as a whole. Everything not immediately necessary was



FIG. 12. FAN HOUSE WITH EVASE OPENING ON RIGHT

The fan is a 12 x 5-ft. multivane undershot ventilator. The setting, including the evase chimney, is of reinforced concrete, only the reversing doors and dampers being of steel. Two drives are provided, both placed on the same side.

omitted for the present, but provisions were made so that the various additions could be installed as required with minimum interruption and difficulty.

Ground was broken on this plant in 1919. The work of construction was interrupted by several strikes and by many difficulties in obtaining labor and materials, but the first coal was hoisted in December of the same year. The first stage of construction as herein described was completed in August, 1920.

Executive and operating officials of the Donk Brothers

FIG. 11

Blacksmith Shop

A well-illuminated building with overhead drive for all machines. Four forges and a full equipment of machine tools are provided. An industrial track extends from end to end. At the north end of the shop a 5-ton hand crane handles the work over the large tools.

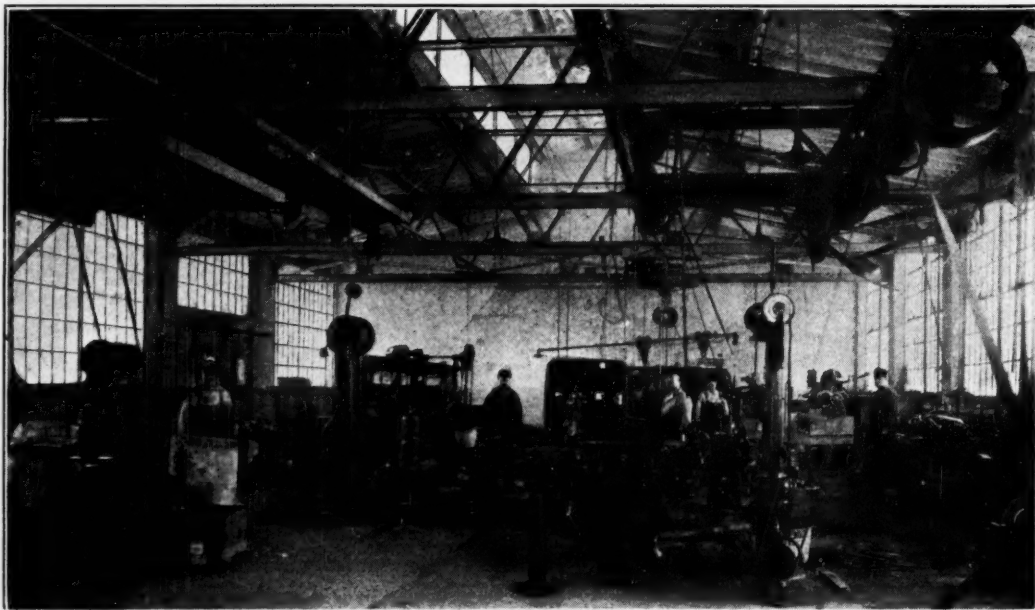




FIG. 13. EXTERIOR VIEW OF WASHHOUSE

This building will accommodate 400 men at present, but there is room for all the men the plant will ultimately require. Note the basement story entered from the left. It is used as a lecture hall and meeting room.

Coal & Coke Co. in direct charge of this undertaking were: Edwin H. Conrades, president, and Edmund C. Donk, vice-president, both of St. Louis, Mo.; also Walter C. Clark, general superintendent, of Maryville, Ill. The plant was designed and constructed by the Allen & Garcia Co. of Chicago, H. B. Cooley being the engineer in charge.

Rope Rollers Must Not Be Set Too Close and Should Be of Manganese Steel

BY JOHN S. WATTS
New Glasgow, N. S.

SPACING rollers at such intervals that they will carry the haulage rope on a slope or traveling way generally is accomplished by rule-of-thumb methods. Though at first sight this haphazard way may seem to give good results, and the whole problem appear to be of little importance, I hope to show that careful attention to the subject is well worth while and will be repaid in lengthened life of both rope and rollers.

As the function of these rollers is to keep the rope from dragging, obviously it is necessary to set the rollers so close together that the rope will not sag enough to touch the ground or the ties. On the other hand, to space the rollers closer than suffices to prevent this dragging is to incur needless expense by providing more rollers than are required.

ROLLERS CAN EASILY BE PLACED TOO CLOSE

In the absence of exact knowledge as to what the correct centers should be, the tendency is to "play safe" and place the rollers sufficiently close to prevent any possibility of the rope dragging. This is done on the assumption that it is better to have too many rollers than too few. A study of the forces acting upon the rope and rollers will show that the above assumption—that close spacing is preferable—is a fallacy for the following reason:

Unless a roller actually rolls, and at the same speed as the rope, sliding friction will develop between the rope and the roller. This is the very condition that rollers are installed to obviate. Furthermore, if sliding friction is to exist at all it would be preferable to have it occur between the rope and the ties rather than on the rollers because with the roller the surface contact or area supporting the sliding rope is little more than a point, whereas at least line contact is afforded by the ties. Thus if there is to be any sliding whatever, the friction and the resultant wear on the rope will be less if this action takes place between the rope and the ties.

The only force present to compel the roller to revolve

is the friction between it and the rope. The magnitude of this force is dependent upon the weight of the rope resting on the roller, which is the weight of a length of rope equal to the distance between the rollers.* Therefore the greater this distance the greater will be the force tending to cause rotation. At best, owing to the small area of contact between the rope and roller, this force is small, and to reduce it by too close a spacing is to invite failure.

Furthermore, close spacing of the rollers increases the number that must be revolved and hence augments the friction load or pull on the rope. In addition there is the increased cost of installation and the upkeep of the superfluous rollers. The more rollers installed over what are actually needed, the more wear from slippage, and slippage causes the life of the whole equipment to be shortened.

When stretched from one roller to the next the rope takes the form of a catenary curve. On a level road in order to ascertain the proper spacing it is only necessary to determine the deflection under minimum pull, this, of course, being the tension that will give the greatest allowable sag. This deflection is to all practical purposes given by the formula:

$$d = \frac{wl^2}{8p}$$

Where d = the deflection or sag of the rope in feet, w = the weight of the rope in pounds per foot, l = the span of the rope, or distance between rollers in feet, and p = the pull on the rope in pounds.

The proper procedure would be to place the rollers as high as possible without placing them so high that they would rub the cars in passing, then determine the maximum allowable center-to-center spacing of the rollers that will give a deflection such that the rope will just clear the ties. The formula may then be transposed to

$$l = \frac{\sqrt{8pd}}{w}$$

When the cable is on an incline it will be necessary to lay out the catenary curve for the minimum pull on the rope, and by trial to scale and lay off on this curve the maximum centers that the allowable deflection will permit.

In conclusion it cannot be too strongly emphasized that track rollers should be as near frictionless as possible, and that their rims should be composed of some wear-resisting material, so as to prevent the formation of a groove in the rim should the roller refuse to revolve for a short time through some accidental lack of lubrication or other temporary difficulty. A roller or pulley that once gets grooved is worse than useless because it will never revolve once the rope drops into the depression.

To expect the common wood roller, turning in two separate bearings, to fulfill such functions as are detailed above is absurd, as a walk along any slope fitted with them will show. While new they are of some little help, but their life is so short that they do not repay the cost of installation, and a really effective slope roller, though it cost twenty times as much, is far more economical. The bearings commonly used set up far too much friction. Even if they are in alignment when first placed, they do not and cannot be expected to remain so. The better arrangement is to cast both bearings together in some kind of frame, box or base-plate so as to insure permanent alignment, no matter

*It also depends on the angle of contact, and that increases with a greater sag between rollers.—EDITOR.

how much the ties to which this frame is bolted may move.

Any wood roller becomes grooved by the rope in a short time, whereupon its usefulness is ended. The ideal roller is one of manganese steel, which will not wear—beyond getting polished—and consequently always retains its circular shape. Such a piece of equipment will last indefinitely, the only renewals required being the brass bushings in the bearings. What is still more to the purpose, it will revolve at the slightest touch of the rope, thus reducing wear to a minimum.

Dangers in Using Carbon-Tetrachloride Extinguishers in Mine Fires

CARBON tetrachloride is given off by certain classes of fire extinguishers as it is a heavy gas and dampens flame. Such extinguishers have been used in fighting mine fires and also in fires in homes, mine buildings and automobiles. It is useful to know that a certain degree of danger accompanies their use. It must be remembered, especially in mine fires, that the army mask, which affords safety in the presence of carbon tetrachloride and its derivatives, phosgene, chlorine and hydrochloric-acid gas, gives no protection against the carbon monoxide that the fire itself is likely to generate.

The mask is, therefore, protection against the extinguishing gas and its derivatives but not against the poisonous atmosphere that may exist altogether apart from the use of the extinguisher. It is interesting to note what Fieldner, Katz and Kinney have to say in an admirable technical paper, No. 248, issued by the Bureau of Mines, and entitled "Gas Masks for Gases Met in Fighting Fires," from which the following extract is taken:

"At ordinary temperatures carbon tetrachloride is a volatile, sweet-smelling, colorless liquid. It readily vaporizes and the vapor is colorless and heavy; 7 to 9 per cent of the vapor mixed with air will extinguish fires. The heavy vapor tends to settle to the bottom of a room and form a blanket over the floor. This blanket effect of the vapor on any material wet with carbon tetrachloride excludes air and so aids in extinguishing fires. Small fire extinguishers, holding about a quart of carbon tetrachloride, are widely used for extinguishing small or incipient fires and are very effective.

GREAT DANGER IN CASE OF FIRE IN CLOSED AREA

"It is dangerous to inhale the gases formed by carbon tetrachloride when it is sprayed on heated materials. Experiments by the Bureau of Mines have shown that the decomposition products of carbon tetrachloride consist of phosgene, chlorine (sometimes), and hydrochloric (muriatic-) acid gas. In addition, high concentrations of carbon tetrachloride itself are produced. Death may be caused by breathing the gases for only a short time. Danger is greatest when the fire is in a closed or confined space. The army gas mask protects the wearer in any concentrations likely to be met.

"Undecomposed carbon tetrachloride vapor arising from the use of the liquid in fire extinguishers when encountered in a small confined space probably will produce unconsciousness by its anaesthetic effect. The commercial product usually contains some carbon bisulphide, a residue of the carbon bisulphide used in the manufacture. Waller and Velej have found that the presence of carbon-bisulphide vapor with that of carbon tetrachloride greatly increased the toxicity, but com-

paratively large amounts of the carbon-tetrachloride vapor must be breathed before the effects become dangerous. For this reason the more serious danger in the use of carbon tetrachloride lies in the products formed from it rather than from the vapor itself.

"Lehman states that 159 parts per million (0.016 per cent) will cause slight symptoms when breathed for several hours; 3,980 parts per million (0.4 per cent) may be inhaled for about one hour without very serious effects; 23,850 parts per million (2.4 per cent) are dangerous in thirty minutes. An employee of the Bureau of Mines was overcome while using a carbon-tetrachloride fire extinguisher on an automobile burning in the open air. Two employees of the Navy Department died as the result of breathing fumes from carbon tetrachloride that had been used when the clothes of one of them caught fire when the men were working in a very small compartment.

"The army gas mask will protect the wearer against carbon tetrachloride, and its use is recommended when a fire extinguisher of this type is used in a small, unventilated space."

British Rules Require Stone Dusting

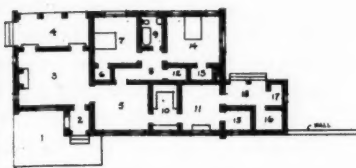
REGULATIONS promulgated by the British Government require that in all mines the roads or any part of the roads that may be accessible shall be treated with incombustible dust in such manner and at such intervals as will insure that the dust on the floor, roof and sides throughout the roadway shall always contain a mixture in which the combustible matter shall not exceed 50 per cent of the whole. They also must be treated with water in such manner and at such intervals as will ensure that the dust on the floor, roof and sides shall be combined throughout with 30 per cent by weight of water in intimate mixture.

The exceptions to these regulations are mines where the floor, roof and sides are naturally wet throughout and where anthracite is worked. Provision is made for frequent sampling—apparently about once a month is considered frequent enough—the samples being analyzed by the company if taken by a company employee, but sent to Eskmeals for determination if taken by a Government inspector. The samples are taken over an area of road not less than fifty yards in length.

It is said that the method of determination is unfair to limestone as a stone-dusting material, because the carbon dioxide burned off in the test is regarded as combustible with all the other material the combustion drives off or burns. It is not clear whether the water of constitution of clays which is driven off by the heat of burning is regarded as combustible. It certainly should not be, as it, like carbon dioxide, is a dampener of flame.

The Government of Great Britain also requires that the dust shall be of a character such as will not injure the men employed. Unfortunately, much of the rock coming from the mine produces dust which is harmful to the men who breathe it.

SENATOR MOSES, OF NEW HAMPSHIRE, has introduced a bill providing for an 8-hour day in the mining industry. It stipulates that 8-hours under contracts for labor and services shall be a day's work in any mine, quarry, etc., in the United States which are engaged in the production of wares which enter into interstate commerce. A fine of \$100 to \$1,000 and imprisonment for one year or both is provided as penalties for its violation.



PLAN
SCALE 1/8" = 1'-0"

KEY

1 TERRACE-REAR PORCH	12 x 18
2 VESTIBULE	8 x 8
3 LIVING ROOM	12 x 20
4 PORCH	8 x 10
5 DINING ROOM	12 x 12
6 CLOSET	
7 BED ROOM #1	12 x 12
8 HALL	
9 BATH ROOM	6 x 8
10 KITCHEN	7 x 10
11 KITCHEN	11 x 13
12 CLOSET	
13 BED ROOM #2	12 x 12
14 STORAGE	5 x 10
15 RAIL	5 x 10
16 ICE	
17 BACK PORCH	6 x 12



FRONT AND REAR OF HOUSE FOR USE OF DEPARTMENT HEADS

Like all the houses, large and small, this is a one-story building. The terrace at the front and side of the main entrance is paved with brick. It faces to the north and so receives some protection from the sun.

Rosita, Mexico, a Carefully-Planned City; Pleasing, Comfortable and Hygienic—II

Three Types of Houses for Native Mechanics and Seven for Miners and Laborers Relieve Monotony — All Front on Spacious Avenidas — Each Family Will Have Lot 50 x 50 Feet and Share in Large Community Farm

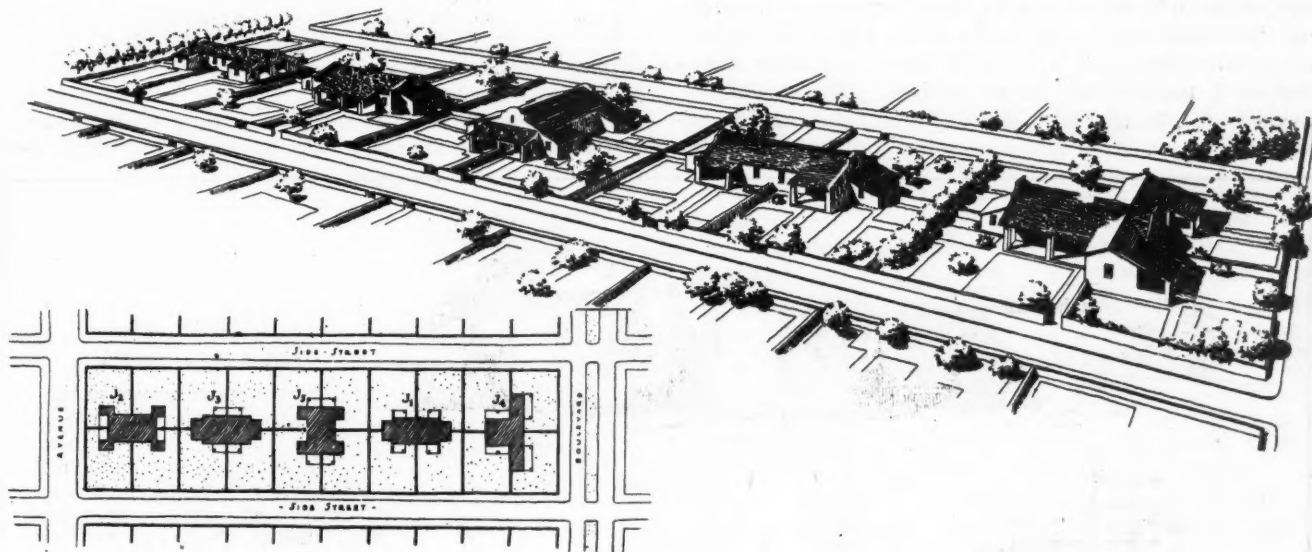
BY HJALMAR E. SKOUGOR*
New York City

IN the foregoing article were described the public buildings of the town of Rosita. The function of the present article will be to cover roughly the design of its private houses, which are in greater variety than the illustrations would suggest, as it is impossible to do more than select a few.

The manager's residence, division and department heads' houses, as well as the clerks' and foremen's dwell-

*Consulting engineer, 150 Nassau St.

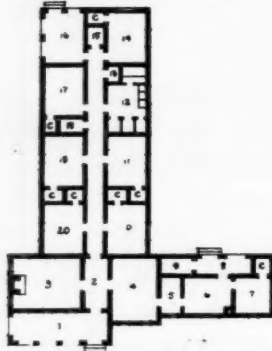
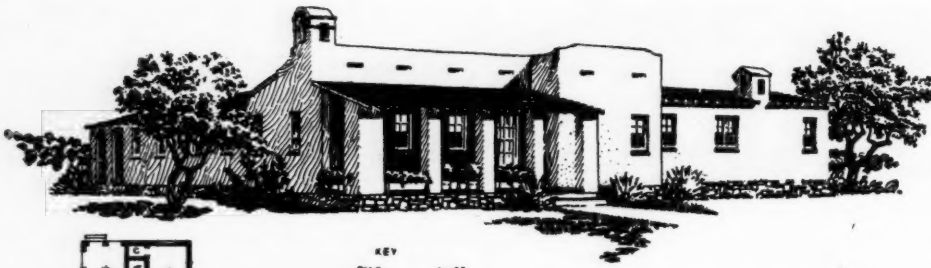
ings are all constructed of adobe masonry, on stone foundations with wood-shingle roofs. They are plastered inside and out with a combination lime and cement mortar. Colonial Mexican architecture is strictly adhered to. Three distinct designs will be embodied in the houses for the division and department heads and each will be equipped with all modern conveniences. While open fireplaces are provided for each house, most of the heating will be accomplished by



PLAN
Scale 1/8" = 1'-0"

BLOCK OF TWENTY HOUSES FOR MINERS AND LABORERS IN GROUPS OF FOUR

In this can be seen the walls, which give the desired privacy. These house groups vary considerably in plan, as may be seen, and this makes the block far from monotonous. The arrangement of the rooms and porches is, however, about all the change made. It will be recognized that the miners' and laborers' group on the extreme right is that illustrated at the foot of page 1037



KEY	
1 PORCH	7 x 27
2 ENTRY	4 x 8
3 LIVING ROOM	12 x 12
4 DINING ROOM	12 x 12
5 KITCHEN	8 x 10
6 SERVANT'S RM	8 x 10
7 BED ROOM	10 x 12
8 BATH ROOM	5 x 7
9 CLOSET	5 x 7
10 BED RM #1	10 x 12
11 BED RM #2	10 x 12
12 SERV. RM	10 x 12
13 BATH ROOM	5 x 7
14 CLOSET	5 x 7
15 TERRACE	12 x 12
16 PORCH	12 x 12
17 BED RM #3	10 x 12
18 BATH ROOM	5 x 7
19 CLOSET	5 x 7
20 TERRACE	12 x 12
21 PORCH	12 x 12

Mexican Staff House

In this cosy residence are six bedrooms, a living room, a dining room and necessary offices including a servant's room. The large porch in front affords a well-sheltered and comfortable outdoor meeting place for the Mexican staff. The rooms are well lighted. Despite its simple lines the exterior is quite attractive.

means of electric stoves. In every case garages and quarters for servants are provided.

The houses for the manager, the division heads, the department heads, the clerks and the foremen while distinctive in architecture, differ only in the number and the size of the rooms. Each is liberally provided with space for gardening, lawns and shrubbery.

NATIVE MECHANICS' HOUSES OF DUPLEX TYPE

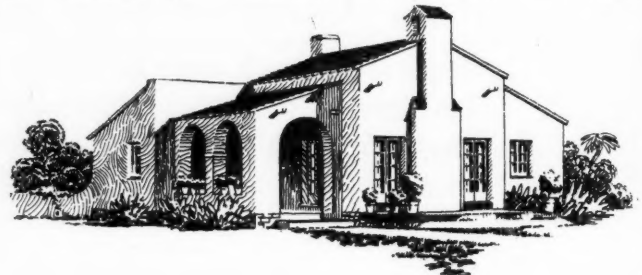
The houses furnished for the accommodation of the native mechanics are in all cases of the duplex type, with three rooms, a kitchen and porch allotted to each family. The present status of education prevailing among the Mexican mechanics is such that bathrooms and running water in the houses were considered likely to be an occasion for uncleanness. For this reason public comfort stations are provided. These are readily accessible throughout the town site with a certain number of people allotted to each, their exact location depending upon the density of population.

The water supply is provided in such a manner that one outlet will serve two to four families. Throughout the town site, back yards, side streets and alleys are totally dispensed with, each family dwelling fronting on a main street or an avenue. The mechanics' houses are like those previously mentioned, being constructed of plastered adobe masonry and built on stone

masonry foundations, with roofs of timber construction covered with wood shingles.

To eliminate the monotony in appearance which would be inevitable if all houses were of one design, three distinct types will be provided for this class of workmen. The married native miners and laborers in Mexico today as a class are unaccustomed to comforts and hygienic conditions of any kind. This is evidenced by the condition under which they now live, not only in this particular district but throughout all Mexico. It is therefore considered a distinct and novel procedure to afford them the comforts which have been planned by the

Compañía Carbonifera de Sabinas, S. A. Each of the houses for laborers and miners, of which



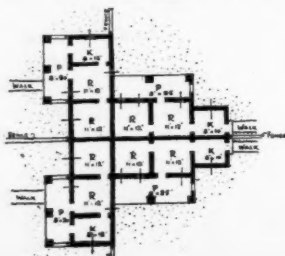
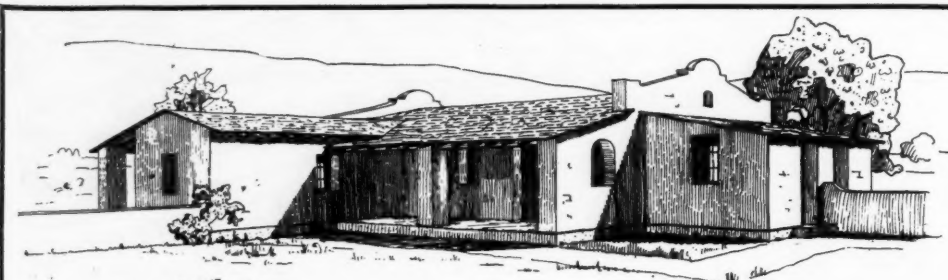
PLAN
Scale 1/4" = 1'-0"

KEY	
1 TERRACE	8 x 12
2 PORCH	8 x 12
3 LIVING & DINING RM	12 x 12
4 BED ROOM #1	10 x 12
5 CLOSET	5 x 7
6 CLOSET	5 x 7
7 BED ROOM #2	10 x 12
8 BATH ROOM	5 x 7
9 CLOSET	5 x 7
10 KITCHEN	8 x 10
11 SERVANT'S RM	8 x 10
12 BACK PORCH	7 x 7
13 PORCH	8 x 12

HOUSE FOR DIVISION HEADS

Again a comfortable porch, which probably will be made use of for most "living" purposes. With that in view the living room and the dining room are in one. There are two bedrooms and a servant's room and all the necessary addenda that a modern house must have.

for the sake of variety and appearance seven distinct types have been adopted, has the same floor area and

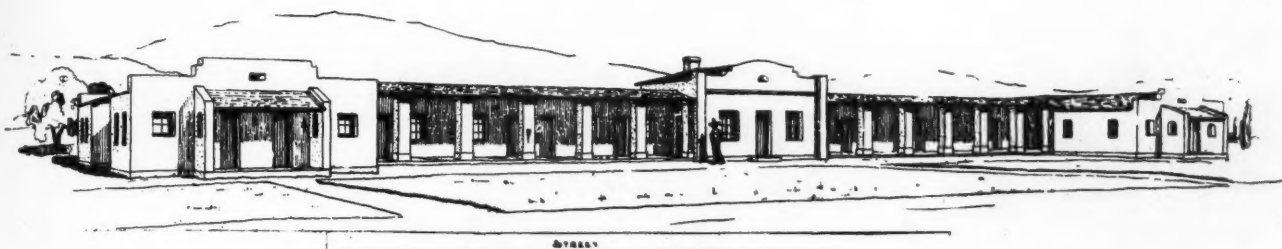


PLAN



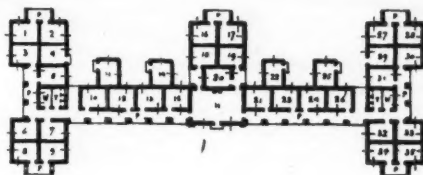
Miners' and Laborers' Group

The near end group in the block on previous page. The upper is the view from inside the block and the lower the same house as seen from the side street. The units are the same but the arrangement a little different from that in the other groupings.



Quarters for Single Men Employed as Miners and Laborers

Thirty-five rooms and seven porches are provided in this house, with a central hall, two toilet rooms and washrooms. There is no kitchen, dining room or servants' quarters. Each man provides for himself in Mexican fashion.



1-35 Rooms 10-12
H Hall 17-17
T Toilets 7-10
W Washroom 4-10
P Porches

PLAN
Scale 1/4" = 1'-0"

arrangement as far as the number of rooms is concerned. Each house accommodates four families, each family occupying two rooms, a kitchen and porch. The building fronts on two streets, so that a separate entrance will be provided for each dwelling. Each lot in turn is separated from those adjacent by a low adobe fence allowing a plot approximately 50 x 50 ft. for the cultivation of lawns, vegetables or other agricultural products. Electric illumination is provided in all rooms, and water is supplied at the intersection point of the four fences. In this manner water for four families, both for domestic use and irrigation purposes, will be drawn from one spigot.

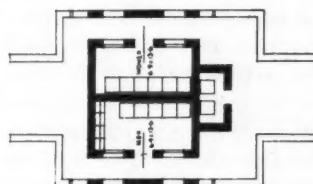
SINGLE LABORERS HAVE COMMUNAL DWELLING

The management has considered that the area allotted to each family—namely, 50 x 50 ft.—will not suffice in some instances for their agricultural ambitions, and it is therefore planned that a community farm will be undertaken, allotting to each family a certain amount of ground where additional corn or other food products may be raised or where goats, pigs or other domestic animals may be kept.

Public comfort stations or toilets, as spoken of previously for the mechanics, will be shared by the miners and laborers. These consist of two separate compartments, one each for men and women. Each compartment is provided with four automatic flush seats, each set in a vitreous enameled stall enclosure. These seats are ventilated by a pipe in the rear of each stool which passes up behind an enameled rear wall.

Unlike other mining camps in the United States,

but little provision is necessary here for the accommodation of single men. This is because it appears to be an inborn trait and almost universal custom among Mexican bachelors to board either with their own families or with friends. However, in order to accom-



PLAN
Scale 1/4" = 1'-0"

TOWN-SITE TOILET

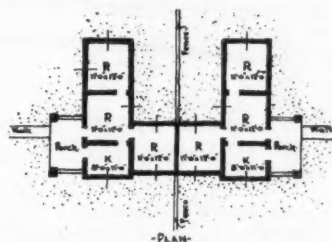
These toilets are grouped so as to be convenient to several houses, as is shown. They are walled around in such a manner as to insure privacy and are provided with regular flushing conveniences such as will assure that Rosita will always be a sanitary camp.

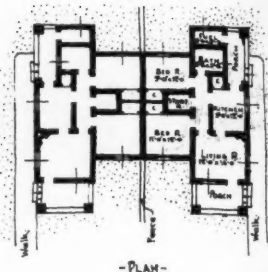
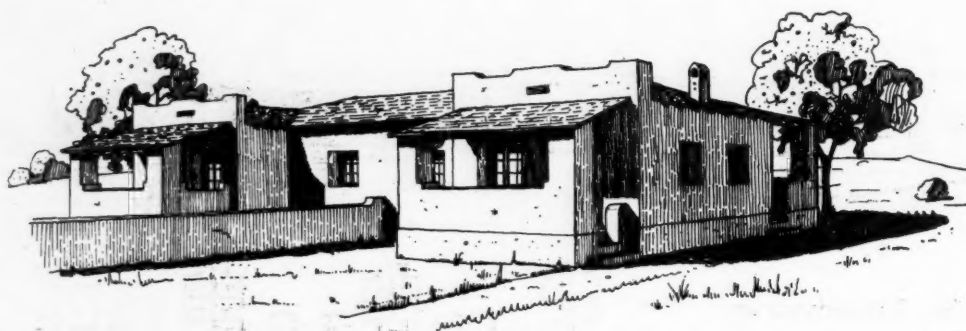
modate any possible floating population that could not be taken care of in this manner, a Mexican laborers' house of ample proportions will be erected. It will be so arranged that each room is supplied with air and light and the entire structure will accommodate approximately seventy-two men on the basis of two to a room. In the center of this building a large assembly



MECHANICS' DOUBLE HOUSE

The arrangement of these houses in pairs instead of fours, the exterior design and the addition of a fourth room in each unit differentiates them from those for miners and laborers.





DOUBLE HOUSE FOR CLERKS OR FOREMEN

An adobe wall separates the yards of the two houses from each other. Note the three closets and two porches which furnish open air to the occupants without exposing them to the rays of the hot sun. These houses, it will be noted, are each furnished with a bathroom.

room with open fireplace will be at the disposal of these men. Two washrooms, one at each end of the structure, also will be provided.

Single native clerks will reside in the Mexican staff house, where as many as twelve may be accommodated. This will be operated on the usual mess system, as is practiced in all mining camps. The staff of single Americans will be lodged in the so-called hotel, located among the other staff quarters on the hill overlooking the town site. This structure has been provided with a large entertainment hall, a reading room, and a large dining room, also sleeping quarters together with three or four rooms which will be set aside for transient guests.

A word about the Rosita mine. It is planned to produce three or four thousand tons a day. All the coal will be coked and the byproducts saved. The equipment will be in every way up to date, the coal being dumped underground and being hoisted in skips. This part of the equipment was described most interestingly by Allen & Garcia in their article on skip hoisting presented at the recent session of the American Institute of Mining and Metallurgical Engineers which appeared in *Coal Age* March 17, pp. 485-489, and on March 24, pp. 529-533.

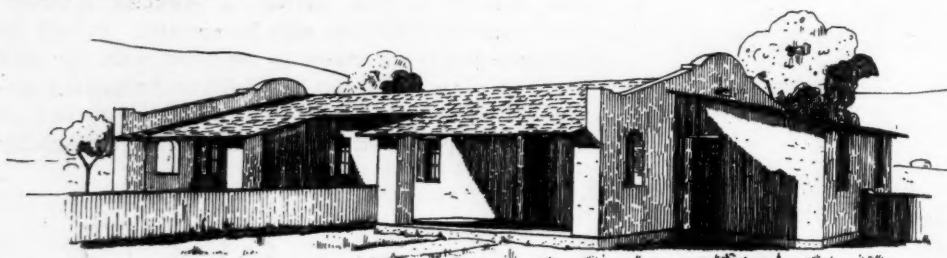
A bathhouse with every convenience will be erected. The men will be checked in and out of the mine, so that in case of an accident it will be known what men are in the colliery workings. There will be no subcontracting at these mines. It has been the general practice in Mexico to use that method of operation, but it has its drawbacks, and will not be introduced at the Rosita plant, which also will be run for only one shift in every twenty-four hours.

A large community farm will be provided in which every man who so desires will have a plot. This will be outside the village. The men will keep their pigs and goats in these allotments. These animals will not be allowed to enter the town.

Ran Hoisting Engine by Water-Wheel

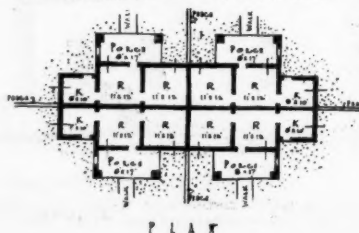
ADDRESSING the Leeds University Mining Society R. Nelson, former British electrical inspector of Mines, said: "For fifty years after its introduction the steam engine was used solely to unwater mines. In the year 1776 the first engine, a pump, to be placed below the ground was set to work at Whitehaven Colliery, and at about the same time the idea of a mechanical coal cutter seems to have occurred to someone, for it is recorded in a book published anonymously in the year 1835 that sixty years before that date—that is, the year 1775—Willy Brown's Iron Man was set to work at the coal face in Wellington Colliery, in Northumberland.

"In the year 1777 a Newcomen engine with a cylinder of 26 in. diameter and a stroke of 5 ft. 9 in., making 14 strokes a minute, was set to work at Long Benton Colliery in Northumberland to raise water to a height of 34 ft. at the rate of 146 cu.ft. per minute, the head of water being used subsequently to drive a water wheel which drew up a basket or corf of coal weighing 6.5 long hundredweight (728 lb.) in two minutes. This was one of the first applications of steam power to coal hoisting, if not the very first, though the application was not, of course, direct."



Four-House Group for Miners and Laborers

By four stone walls the residences are completely separated from each other. Each unit has a large well-sheltered porch, two general utility rooms and a kitchen. The approaches to the houses also are completely separated.



FORMAL INVITATION has been extended to the Mining Section of the National Safety Council, of which B. F. Tillson is chairman, to participate with the institute in a meeting on Safety in Mining at the annual meeting in February, 1922. The acceptance of this invitation has been authorized by the executive committee of the National Safety Council, of which S. J. Williams is secretary and chief engineer. The purpose is to ally safety and economic engineering.



Problems of Operating Men

Edited by
James T. Beard



Certification Under the Pennsylvania Revised Mine Law

Numerous Letters Protest Against the Continuance of the Revised Certification Law in Pennsylvania, Claiming It To Be a Step Backward That Has Lowered the Standard and Increased the Danger in Mining

AFTER carefully reviewing the various references made in *Coal Age*, relating to that portion of the Pennsylvania mining law that was revised some time since to permit the employment of mine foremen who were uncertified, I am inclined to believe that the status of the law is conflicting.

While the law provides for the appointment of a competent examining board and specifies the qualifications of candidates that may be certified as being competent to fill the positions of mine foreman, assistant foreman and fireboss, this provision is apparently made valueless by those revised sections of the law that make it possible to fill these positions with men who are not certified.

May I ask what is the use of going to the expense of employing men to examine candidates as to their fitness to act as foremen, assistant foremen and firebosses in mines when the law provides that *any* man thought by his employer to be competent can be selected for these positions, and a certificate is not required of him.

STRANGE FEATURE OF LAW IS FAILURE TO PROTECT ITS CITIZENS

The strange aspect of the law, however, lies in the fact that the employer is made the sole judge of a candidate's fitness, thus taking the place of the regularly appointed examining board. It is no wonder that men ask, "Why go to the expense of maintaining an examining board when mine operators are authorized to examine for themselves the men they employ?"

While I believe that the law makes suitable provision for the punishment of violators of its requirements, whether the offender holds a certificate or is uncertified, I fail to understand why any person who operates a coal mine is authorized to choose whom he will to fill these responsible positions where men's lives are in danger. Is it not the province of the state to afford these men, citizens, protection under its laws?

It has occurred to me that if there is any reason for doing away with the services of our examining boards it will be better to authorize the Department

of Mines to examine and certify certain individuals who might be given some such title as Mine Manager.

Such a certified mine manager would then supervise as many mines as he could visit at least three times a week, or every other day. He should be required to obtain, say 90 per cent in examination. If necessary, he could be given an assistant who would be likewise certified by the Department of Mines if he obtained 80 per cent in examination.

HOW A CERTIFIED GENERAL MANAGER COULD SERVE THE STATE

My opinion is that such a certified manager could be given authority to pass on the fitness of all candidates for the positions of foreman, assistant foreman and fireboss, in the mines of which he has charge. In other words, he would authorize the appointment of such officials by granting them what might be called a "vest-pocket license" to be carried at all times by the person so appointed.

Under such a system I believe the standard would not be lowered and the men appointed to fill these responsible positions would be competent to perform their duties, while the lives of mine workers would be fully protected under the law.

It is my belief that the time is coming when competent and skillful men will be required as mine officials more than ever before. If this is true, the present conflicting system should be set aside and a practical and reliable method adopted to insure safety in coal mining.

R. W. LIGHTBURN.

Gans, Pa.

ANOTHER LETTER

TO MY mind, the object of having mine officials pass an examination before a competent examining board is not only to prove their ability and fitness to fill the positions they desire, but at the same time to raise the standard of these positions and make the men who fill them more responsible.

Under the old law, which was in force up to June 1, 1915, this two-fold object was unquestionably accom-

plished. The same plan has proved effective in every class of work, in other industries, where trained men are needed and an examination has been required to determine their fitness.

Just where the Pennsylvania law makers got their inspiration, when they amended the law and reduced certified mine officials to the level of men who had not the courage or ability to undergo the test of an examination, is a question that does not seem clear, although this has been explained as having been brought about by the passing of the Workmen's Compensation Law in Pennsylvania.

STANDARD OF SAFETY LOWERED BY THE AMENDED LAW

However this may be, the fact remains that the certification law was amended in a manner that has dropped the standard of qualification of mine officials to the level of the competent miner, who may have no knowledge of the theory and principles of mining.

All intelligent men regard this as "a backward step," and it may be worth while to analyze the situation, in order to get a little clearer idea of what the certificate means to its proud possessor. In this analysis, we will assume that the man has obtained his papers by fair means.

In every class of education and improvement we find there is awarded some form of merit. The progress of students, in schools and colleges, is determined by examination, and the successful student is finally awarded a certificate. This plan has proved satisfactory and, in most cases, absolutely necessary to develop the best that is in students in their preparation for life. What would the school system of education and the work of colleges and universities gain by abolishing the certificate as evidence of what was accomplished?

CERTIFICATE VALUED IN OTHER INDUSTRIES; WHY NOT IN MINING?

It is frankly admitted that a certificate does not necessarily guarantee the qualifications of a worker; but if it has been obtained by fair means it shows that the man has an ambition to succeed, which is an essential quality in any mine official. If it can be truly stated that the certification law, as it applies to mine foremen and other officials in Pennsylvania, is not effective, the fault must lie with the management of coal mines.

It is well known that, in other industries, the system of selection by such means has proved valuable and secures workers of the highest order. There is

no industry that stands, today, more in need of high-class supervision than a coal operation, and every effort should be brought to bear on this situation and encourage capable men to strive for official positions.

To this end, the examination should be designed to test not only the candidate's mining knowledge but also his business ability, a quality that is often lacking in mine foremen today. The successful mine foreman must plan and supervise the work of many men in a way to prevent lost motion and the waste of supplies and material and that requires shrewd and tactful business ability.

GEORGE EDWARDS.

Pikeville, Ky.

THIRD LETTER

ALTHOUGH much has been said on this subject of the employment of uncertified men as mine officials, I may be permitted to add a few comments feeling as I do that great injustice has been done to men who, by hard study, have qualified themselves to fill the responsible position of mine foremen.

Admitting that there are good practical men holding positions as foremen, assistant foremen and firebosses in mines, the fact remains that they are not fitted to solve many problems that arise requiring a knowledge of the principles of mining. The Pennsylvania law makes the operator the judge of a man's qualifications; but, let me ask, How can an operator judge of a man's technical knowledge and ability to handle these problems when he, himself, has never been put to the test before an examining board?

Even with my 27 years of mining experience, I would not undertake the responsibility of managing a mine as foreman, without having previously fitted myself for those duties by studying the principles of mining and proving my knowledge and fitness before an examining board.

Some years ago I made that mistake and it taught me a lesson. Until then I had not realized that a man must study at home and gain a knowledge of the principles of mining, before he is fit to manage a mine. To my mind, it is absurd for an operator to assume that a practical man is capable to discharge the duties of mine foreman when he has not the theoretical knowledge that will enable him to play safe under all conditions.

EXPERIENCE OF FOREMAN UNDER AN UNPRACTICAL SUPERINTENDENT

Since gaining my certificate of competency enabling me to act as foreman, like many others I have suffered the experience of working under a superintendent who had no knowledge of the theory of mining and, as a result, our ideas and methods frequently clashed.

It was often a wonder to me that a man so lacking in knowledge and displaying bad judgment could hold his job, particularly as he was not blessed with an amiable disposition. Many a time I asked myself how can such a

man be thought by his employer to be equally competent with other men who have proved their competency before an examining board and been certified.

With a desire to encourage the habit of study among miners, I have taught mining classes. In a few instances, mine officials who were supposed to be competent have attended these classes only long enough for me to find out that they did not have the capacity for the work, which they frankly admitted when talking with them. To me, it is a mystery how some of these men hold their jobs.

ESSENTIAL QUALITIES IN FOREMEN

None will deny that the essential factors, in mine foremanship, are the safe and economical operation of a mine, involving the preservation of life and property and the successful extraction of the coal at the lowest possible cost of production. It cannot be claimed that the present status of the Pennsylvania law insures these conditions. On the contrary, by permitting the employment of unqualified persons in responsible positions, the law discourages ambitious miners, while men of less ability are chosen to fill their places.

In closing, let me urge that all mine officials, including our mine superintendents, should hold first-grade certificates, the same as mine foremen in charge of gaseous mines, while assistant foremen and foremen in non-gaseous mines should be required to hold second-grade certificates. By this means justice will be done to all, qualified men will be recognized on merit alone and politics and favoritism will be eliminated.

R. B. WARDLAW.

Rockwood, Pa.

FOURTH LETTER

CONSIDERING the facts brought forward in the many letters regarding the certification law in Pennsylvania as it has been revised, one is bound to conclude that this law has lost its value, by permitting the employment of unqualified men to act as mine foremen, assistant foremen and firebosses.

That this provision of the law has destroyed the incentive of hundreds of young mining men to study and fit themselves in other ways for the positions open to them cannot be denied. Many have given up their studies, believing that they can get the position they desire, without going to that trouble and then having to pass an examination before an examining board.

As to the question of the punishment of uncertified men for a violation of the law, I agree with what has already been said by Alexander Waugh, *Coal Age*, April 28, p. 756; namely, that this is covered in Art. 26, Sec. 2, of the bituminous law, which makes any neglect or refusal to perform the duties required by law a misdemeanor, punishable by a fine or imprisonment or both, at the discretion of the court.

What I want to say is, that our lawmakers should re-enact the old law that required all mine foremen, assistant foremen and firebosses to hold a certificate of competency granted by a duly appointed examining board. The life of but one miner is too precious to be entrusted to an uncertified official.

My idea is that every mine official should take the examination, at least every four years, which would weed out the men who do not care to keep themselves up-to-date, and would make for efficiency. I believe our examining boards are well constituted and do not favor any change in their personnel, which represents the miners, operators and the Mine Inspection Department of the state.

SAK.

_____, Pa.

FIFTH LETTER

IHAVE read with great interest all the letters pertaining to the employment of uncertified officials in mines and want to say that, to my mind, these uncertified men are practically leeches, who cling to the industry merely for what they can get out of it for their own benefit and care little for the future of the mine.

On the other hand, a certified official has the ambition to keep a mine, in his charge, in such a way as to provide for its future development. His method is an open challenge to any one who may succeed him in his official capacity.

When a man begins to study he starts to build a reputation for himself. When he has secured his certificate every job he undertakes is a step to greater efficiency. Such a man is going to be very careful to avoid doing anything that might discredit his reputation, which he is anxious to safeguard.

UNCERTIFIED MEN TAKE CHANCES

The uncertified man, on the other hand, has no reputation as a student of mining. He may have practical experience; but, in the majority of cases, he is given to taking chances that a certified official would not consider safe.

What is true of a foreman should apply with equal force to the mine superintendent. The Pennsylvania mining law omits to specify the qualifications of that official, however, and merely outlines his several duties. It often happens that the superintendent of a mine has had no practical training in its operation, but is chosen for that position because of his clerical ability or, perhaps, by reason of personal friendship.

In any case, the superintendent is expected to supervise the work of the foreman, which he often does to the great disadvantage of the company and the chagrin of the foreman, who must follow the instructions given him by his superior officer, even though he knows this will result in loss to the company.

It is clear that a foreman working under these conditions is not given a square deal. He is held responsible for every item that appears on the cost-sheet and for keeping up the daily out-

put of coal. To say that he is handicapped is to express the situation mildly. Owing to his superintendent's lack of practical experience, the foreman is unable to talk over matters with him as he would if the superintendent had a better understanding of practical conditions in the mine.

In nine cases out of ten, a foreman thus handicapped will not make a bold breast of the matter, by taking his troubles directly to the operator or manager; but he will quietly look for another job. His loss to the company will be more keenly felt after he is gone.

Now, to place an uncertified foreman under such a superintendent, one can readily imagine what the condition of the mine would be in a short time. The superintendent naturally will demand a high tonnage and a low cost-sheet. As a result, the uncertified foreman will generally be found to neglect everything but getting out the coal.

NO REGARD FOR FUTURE OF MINE

For lack of timbering, air-courses are blocked by falls of roof; on the road, cars are derailed and wrecks are caused by the failure to employ competent trackmen whose duty it is to look after those matters. In short, everything throughout the mine is soon in bad condition.

In order to meet the demand for coal, men have been put to work, in this mine, wherever cheap coal could be gotten, without regard to the future of the mine. All development work has been abandoned for the time, and it is not long before the uncertified foreman reports the winding up of the mine, by reason of a general squeeze closing many places and cutting off practically all available coal.

Speaking of certified men, Robert A. Marshall makes the statement, *Coal Age*, Apr. 7, p. 629, "The fact that a man is certified by a state board and has his papers does not prove that he is competent or efficient."

While that is true in some instances, the Pennsylvania law requires that a certified man shall have had five years practical experience in the mine and

pass a satisfactory examination before the board, in order to get his certificate. He must also give evidence of good character. If the board does its duty well these requirements should produce capable certified men.

Mr. Marshall says again, "There are miners who have no learning and perhaps can neither read nor write, but who have made successful and efficient officials in charge of mines." I am unable to see how a man that could neither read nor write can be intelligently informed in regard to the requirements of the mining law, and make an efficient mine official.

How can such a man read what instructions may be given him, or

countersign reports of the fireboss and do other work required of a foreman? Such a man might be able to squeeze through, if properly nursed by his superintendent; but I am inclined to think his success is dependent largely on his certified assistants who are qualified for their work.

In closing, let me say the revised law has decreased the value of the certificate and lowered the standard of safety in our mines. As a result many of our young men have ceased their study of mining and sought other work. The industry needs them and every effort should be made to hold them.

W. J. WALKER,
Aultman, Pa. Mine Foreman.

Inquiries Of General Interest

Ventilating a Four-Entry System

A Four-Entry System, in a Mine, Provides a Separate Main Intake and Return Airway for Each Side of the Mine and Affords a Most Efficient Means of Haulage and Ventilating

IN SOME of our more recent developments, we have found it of advantage to adopt the four-entry system, which provides ample haulage roads and air-courses that we believe will greatly expedite the operation of the mine and result in increased efficiency.

After a careful study of the plan, we are not at all certain as to the best method of ventilating such a system and desire to ask for information along this line. For that purpose, I am submitting a general plan of the proposed development. Will *Coal Age* indicate on this plan how the air current should be conducted and distributed in the mine?

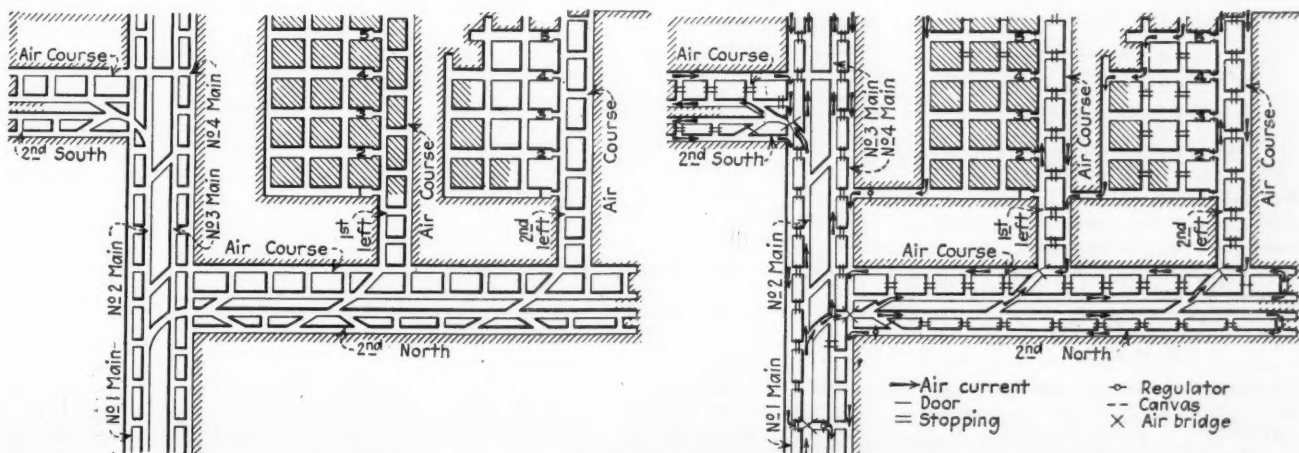
It had been our intention to make the third and fourth main headings the return air-courses, as the fan is located

convenient to those headings. However, this may not be the best arrangement and we are anxious to adopt the most efficient plan both in respect to haulage and ventilation. The suggestions of *Coal Age* and its readers will be greatly appreciated.

—, W. Va. SUPERINTENDENT.

There is no doubt but that the four-entry system is an advantageous one to employ in the development of a large mine. As this correspondent has stated, it provides ample haulage roads and air-courses and affords the means of increasing the efficiency of operation.

On the left of the accompanying figure, we have reproduced the plan submitted, while on the right is the same plan properly ventilated. The



PLAN OF A SECTION OF A MINE, SHOWING ALSO MOST EFFICIENT VENTILATION

direction of the air currents is shown by the arrows; and all doors, stoppings, regulators, and air bridges are marked in the usual manner.

The four-entry system provides separate intake and return air-courses for each side of the mine. Assuming that the fan is located, say at the mouth of the fourth main heading, if the blowing system is adopted it will be necessary to construct air bridges to conduct the air across the second and third main headings in order to reach the first main on the opposite side of the mine.

If the mine is generating gas, however, it is better to ventilate it on the

exhaust system. In that case the two central headings, the second and third main, will each become an intake and haulage road for its respective side of the mine, while the first and fourth main headings will be the corresponding return air-courses.

As each pair of cross-headings becomes sufficiently developed, an air bridge is constructed at its mouth to conduct the return current over the haulage road. This plan reduces the required number of doors to a minimum. Regulators will be required at different points on the return of the several splits, in order to secure any desired distribution of air in the mine.

angles to its strike. The bearing of the dip, in this case, is found by subtracting the strike bearing from 90 deg., which gives for the bearing of the dip N 34° 03' E.

Now, drawing the line A O parallel to the line of strike X C gives the right triangle A O B and the elevation at O is the same as at A (520 ft.). The distance O B is $1,800 \times \cos 10^\circ 57' = 1,800 \times 0.9818 = 1,767.18$. In this distance the seam dips 150 ft. from O to B. The amount of dip is therefore $1,767.18 \div 150 = 11.78$; or 1 ft. in 11.78 ft.

QUESTION—An endless-rope haulage system is designed to deliver 800 tons of coal in eight hours. The road is 5,000 ft. long and averages 4 per cent grade against the loads. The cars weigh 600 lb., and have a capacity of one ton each. If the speed of the rope is 2½ miles per hour, what horsepower is necessary to operate the system?

ANSWER—An output of 800 tons of coal in eight hours, or 100 tons an hour, hauled in cars having a capacity of one ton will require 100 cars to reach the tipple each hour. The rope speed being 2½ miles per hour is $(2\frac{1}{2} \times 5,280) \div 60 = 220$ ft. per min. At this speed of hauling, the time required for a car to pass over the road 5,000 ft. long is $5,000 \div 220 = \text{say } 22\frac{1}{2}$ minutes. At the rate of 100 cars per hour, or 100/60 per minute, the number of cars on the rope at one time would then be $22\frac{1}{2}(100/60) = \text{say } 38$ cars, carrying 38 tons of coal.

Now, since the cars and rope are balanced, in an endless-rope system, the net load is the weight of the coal or 38 tons, which is effective to produce grade resistance. Estimating the grade resistance as 20 lb. per ton for each per cent of grade, gives a total of $38(4 \times 20) = 3,040$ lb.

The frictional resistance, commonly called "track resistance," however, must be estimated for the total moving load, including the weight of the loaded and empty cars and the rope. The weight of a loaded car is $600 + 2,000 = 2,600$ lb. There being 38 loaded cars and the same number of empties, gives a total for the cars $38(2,600 + 600) \div 2,000 = 60.8$ tons. Assuming a 1-in., cast-steel haulage rope, weighing 1.58 lb. per ft. gives for the weight of the rope $(2 \times 5,000 \times 1.58) \div 2,000 = 7.9$ tons. The total moving load is, therefore, $60.8 + 7.9 = 68.7$ tons.

Now, taking the track resistance as, say 25 lb. per ton of moving load, gives $25 \times 68.7 = 1,717$ lb. The load on the engine is the sum of the grade and track resistances, or $3,040 + 1,717 = 4,757$ lb., say 4,800 lb. Finally, taking the efficiency of the engine as 80 per cent, the horsepower required for the operation of this system is

$$H = \frac{4,800 \times 220}{0.80 \times 33,000} = 40 \text{ hp.}$$

QUESTION—How can the number of doors be reduced in a coal mine?

ANSWER—By splitting the air current and building air bridges at the mouth of each split.

Examination Questions Answered

Miscellaneous Questions Asked at Different Examinations

(Answered by Request)

QUESTION—Give the size of a centrifugal pump required to raise 400 gal. per min., against a 500-ft. head. Give the essential details, such as revolutions per minute, diameter of suction pipe and number of stages of the pump. What is the most suitable power to run this type of pump underground, having due regard to efficiency and safety?

ANSWER—Centrifugal pumps are rated by number, which is the diameter of the discharge portal, in inches. Thus, a No. 3 pump has a discharge portal 3 in. in diameter; a No. 4 pump, 4 in. in diameter; etc.

In estimating the size of pump required for a given delivery, it is customary to limit the head per stage to 100 ft. Thus, a 500-ft. head, would require a five-stage pump.

For example, the number of a 5-stage pump or diameter of the discharge portal required to deliver 400 gal. per min., against a head of 500 ft. may be estimated by the following formula:

$$d = \sqrt{\frac{G}{\sqrt{10h}}} = \sqrt{\frac{400}{\sqrt{10 \times 100}}} = 3.56, \text{ say } 4 \text{ in.}$$

In this case, therefore, should be used a five-stage No. 4 pump operated by a 60-cycle motor, having a speed of, say 1,750 r.p.m. Assuming an overall efficiency of, say 60 per cent, the power required to deliver 400 gal. of water per minute, under a head of 500 ft. is:

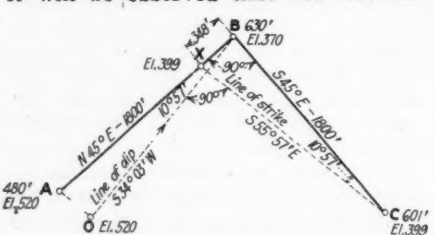
$$H = \frac{8\frac{1}{3} \times 400 \times 500}{0.60 \times 33,000} = 84 + \text{hp.}$$

The diameter of the suction pipe, in this case, should not be less than 5 in.

QUESTION—Three boreholes A, B, C are, respectively, 480 ft., 630 ft. and 601 ft. deep to the coal seam. The sur-

face is level. The distances and bearings of the lines joining these boreholes are as follows: A B, N 45 deg. E, 600 yd.; B C, S 45 deg. E, 600 yd. Find the bearing of the dip and strike lines in this seam and the amount of dip.

ANSWER—The surface being level, assume its elevation as 1,000 and subtract from this the depths of the several holes, which gives the respective elevations of the seam at each hole. Referring to the accompanying figure, it will be observed that the elevation



of the coal at C (399 ft.) lies between the elevation of the seam at A (520 ft.) and that at B (370 ft.). The first step, therefore, is to find the location of a point on the line A B having the same elevation as C. Calling this point X, the line CX will be a level line or line of strike. From A the seam falls $520 - 370 = 150$ ft. to B. The rate of fall is 150 ft. in 1,800 ft., or 1 in 12. But, the fall from X to B is $399 - 370 = 29$ ft. The distance XB is, therefore, $29 \times 12 = 348$ ft. The angle A B C being 90 deg., the triangle X B C is a right triangle and $348/1,800 = 0.1933$, which is the tangent of the angle at C, this angle is $10^\circ 57'$. Adding this to the bearing of B C, gives for the bearing of the strike line X C S 55° 57' E, or N 55° 57' W.

The dip of a seam is always at right

Co-operative Buying and Reserve Storage as Shields Against High Coal Prices and Freight Congestion

By DAVID L. WING*

IN THE days before the war the average consumer of bituminous coal paid little attention to the procuring of his supply. Coal usually was plentiful and so cheap as to figure modestly in his total cost of operation. Transportation conditions were such that he could count with certainty on loaded cars making their appearance on his switch at fairly regular and frequent intervals. Little reserve storage was necessary—merely enough to equalize any slight check in the continuous movement of the coal travelling to him from the mines. As soon as broken down from its place in the seam in the mine, the coal was loaded into mine cars and dumped over the tippie into railroad cars, in which it at once continued its journey to the consumer's coal pile. Such was the regularity of this movement that the consumer had come almost to the point of considering coal as in the same class as water or electricity, where he had but to turn on a switch to get what he was after.

The war, however, put an abrupt end to these conditions. The chief reason for the change was the inadequacy of the transportation facilities to carry the abnormally heavy burden. It was physically impossible to transport all the coal needed and also at the same time all the other necessary materials. Coal became scarce at points of consumption. It became high-priced partly because of increased costs of production and partly because of the struggle between buyers over a supply of coal insufficient to meet all demands. And in this buyers' struggle it often happened that the use to which the man who paid the highest price put the coal was not the use most in the interest of the community. The plight of the municipal and state institutions, limited by law in their expenditures and with few emergency funds available, and of the local utilities operating on narrow margins between receipts and expenditures, is fresh in the memory. So also are the fuelless days of the winter of 1917-1918.

PRE-WAR CONDITIONS SLOW IN RETURNING

When the armistice came, however, pre-war conditions in respect to coal did not at once return. And today there does not seem to be any prospect of the return for years to come of the pre-war costs, prices and regularity of transport. It is, therefore, imperative that the consumer recognize this situation and take proper measures to meet it.

There is plenty of coal available for mining, there are mines enough already opened to furnish a supply adequate for any probable demand, domestic or and export, but the cost of getting this coal to the mouth of the mine has more than doubled. And the cost of getting it from the mine to the consumer's coal pile has in some cases trebled, while the pre-war regularity of transport has vanished.

To meet present-day conditions many large consumers of coal are protecting themselves against inordinately high prices through more extensive use of

contracts made with responsible operators or wholesalers. Such contracts call for large quantities of coal of a guaranteed standard of quality, delivered at suitable intervals. Furthermore, to protect themselves against the delays or breakdown of transportation facilities, these large consumers are establishing adequate reserve storage near their point of consumption. A notable example of this kind is furnished by the Standard Oil Co. of Indiana at its Whiting refinery. As a reserve to insure the regular daily supply of from sixty to eighty cars (3,000 to 4,000 tons), which is the daily consumption of this plant, the Standard Oil Co. is reported to be storing some 170,000 tons (3,400 cars). Of this amount 100,000 tons is stored under water in a specially-constructed pit, and is thus fully safeguarded against fire and also against undue deterioration. The balance of the coal stored is on the ground along the sides of the pit.

The coal is handled with several large cranes which unload the coal cars, and later reclaim the stored coal. The cost of unloading the coal has been found to be 7.5c. per ton, while reclaiming the coal costs 7.3c. per ton. Most of the coal, which is Illinois screenings, is put in storage during the period of low summer prices. By autumn the storage facilities are loaded to their fullest capacity.

THE WISDOM OF SAFEGUARDING THE COMMUNITY

Without doubt it is good business policy for the Standard Oil Co. to incur the expense of so extensive an investment in order to protect itself against loss due to uncertainties in coal deliveries. Even its enormous reserve storage of 170,000 tons will keep the plant running only about forty days, were the usual daily supply to be cut off completely. And, if such safeguards are adopted on the grounds of good business policy, merely to insure against the contingency of having to shut down from lack of fuel, how much more urgent are the reasons for similar precautions being taken by communities which must have a coal reserve to protect their municipal institutions, such as schools and hospitals, their local public utilities, and their medium-sized and small industrial consumers, and their domestic consumers as well, from the hardships of a coal famine, which would menace not only their pocketbooks but affect vitally the health, protection and welfare of the whole community! To secure the necessary protection against such a contingency, there must be co-operative action on the part of the principal coal consumers in the locality.

It is not reasonable to expect the coal operator and distributor in this era of high interest charges, high costs and high freight rates, to assume any increased financial burden or speculative risk merely to protect consumers who can adequately insure themselves. The most practicable way of securing this protection for the community at a minimum cost at the present time is through the use of the combined purchasing power joined with the maintenance of a joint reserve storage. While such activities may be limited to merely industrial

*Economist, Washington, D. C.

concerns it probably will be found most advantageous to include the municipal and local public utilities among the co-operators. It will profit a manufacturer little to have a sufficient supply of coal if the local municipal institutions and public utilities must shut down or seriously curtail their activities for want of fuel.

The essence of the following co-operative plan for purchase of coal and for maintaining a joint reserve storage lies in making the transactions carried on large enough to make it worth some person's while to see that they are carried on properly. The most efficient carrying out of this idea probably would in many, if not most, cases be achieved by making use of already existing facilities, as far as possible, and of supplementing them by new facilities only in case of last resort. Every effort should be made to get the benefit of the experience of men who have spent years in the business of distributing coal. It is clear that the success of any co-operative action on the part of consumers will be largely dependent on their working out in harmony with coal distributors the practical details based on the idea that the interests of both consumer and coal distributor will be properly safeguarded.

CO-OPERATIVE BODY SHOULD BE SUPERVISORY

How far it might be found desirable for the co-operative organization to engage directly in the coal distribution business or how far all this could be better accomplished through making contracts with responsible parties, and checking up regularly and promptly all performance under such contracts, is a matter that cannot be decided without suitable investigation of the special conditions encountered in each community. It would always be wise at least to find out first what can be done through contracts, and take over the actual conduct of the business only in cases where it clearly develops that the contract way is unworkable. In other words, it would be best for the co-operative organization to act as far as possible, at least at first, as merely a *supervising* body, to insure the enforcement of contracts, rather than to set up an extensive organization to run the machinery of distribution and storage. So long as the commissions or charges for services performed under contracts are *reasonable*, it would be best to continue that way. It should always be borne in mind that to set up anew the machinery of distribution would require a heavy investment, and that it should be done only after its need has been clearly demonstrated. Certain details of the plan will now be considered.

Organization.—The co-operators would do well to form a company, preferably a non-profit stock company, which should act through an Executive Committee of its Board of Directors. This Executive Committee would have charge of the buying of the coal, distributing it to the members and maintaining the joint storage reserve. It should have authority to employ the necessary manager, or executive secretary, to provide the clerical force, and to employ such coal inspectors and fuel consumption engineers as may be found desirable for time to time. Probably the cost of all this service would best be borne by the members through assessments, which might be levied either on the tonnage handled for each member, or its value—whichever is found to be most equitable. It will be possible, if preferred, to add a service charge to the price at which the coal is invoiced to members. All coal bought by the organization should be invoiced to it, and then rebilled

to the members, who will make their payments to the organization. This is so that the organization will have the legal title to the coal, which is desirable for settlement of difficulties with the producers and transporters in matters of grade, condition of coal, prompt shipments, etc.

Requirements for Consumption.—Information must first be gathered from the members showing the kind of coal at present used, whether for steam or gas, and, as far as known, its source, the tonnage required of each kind (if of more than one kind), the monthly or seasonal rate of consumption, the present storage facilities at plant, the location of plant with reference to rail or water delivery, and how much of the coal has to be handled through streets to destination. Also inquiry as to how far it would be practicable, by adjusting the present fire-room equipment, to use cheaper fuel in the shape of lower-grade bituminous coal, or slack sizes, or powdered fuel, or anthracite steam sizes; how far it would be desirable to use mechanical stokers and what bearing the local smoke ordinances might have. In view of the probable continuance of coal prices at a level far above the pre-war prices, such inquiry is especially desirable.

Requirements for Joint Reserve Storage.—Information must be gathered on the kinds of coal and the minimum tonnage needed for reserve storage. The location of the storage depot must be on as cheap land as possible with reference to access to supply by rail and water, and preferably must be so situated as to facilitate the delivery of coal to point of consumption by rail and also by large motor trucks over a good road (in the event of an emergency when the railroad is tied up by a freight blockade or strike). The storage plant should have adequate modern equipment for handling the coal as economically as possible, and must have adequate fire protection and also protection against theft. In some parts of the country the character of the coal may make it desirable to store the coal under water. In some localities this form of storage will not be so necessary, or will be found impracticable or undesirable because of local conditions.

MAKE LONG-TERM CONTRACTS WITH PRODUCERS

Purchase of Coal.—The minimum requirements should be contracted for. These might possibly amount to 80 per cent of the average normal requirements. Contracts made for long terms and large quantities should preferably be made direct with the producers, and probably would be made most advantageously on some form of cost-plus basis, properly safeguarded, however, to insure the costs being under efficient operation. Desirable long-term contracts also can be obtained on a basis of fixed-price-plus-labor clause. Obviously when the operator must carry the risk of advancing costs he must have a higher price. The remainder of the requirements—up to the average normal requirements—should be bought on short-term fixed-price contracts, or in the open market, as may seem from time to time most advantageous.

On signs of approaching exceptional demand or transportation difficulty, recourse should early be had to short-term contracts and market purchases to build up the reserve. Care, however, must be taken not to overload the reserve storage; that should be kept down as low as consistent with safety. All contracts should contain a guarantee that the coal will be up to certain

grades and standards of preparation, and adequate provision should be made for enforcing penalties in case of proven violations of this guarantee. There should be inspections made at such times as found desirable, not only at the mines but also at the docks and, when necessary, at destination, to check up such matters. If the personnel of the coal inspectors could be mutually agreed upon in advance with the sellers of the coal, the settlement of disputes would be facilitated.

Water-Borne Coal.—If it were found necessary for the organization to act directly in the matter of chartering boats, it is probable that, at least at first, it would be found desirable to contract with some regular chartering agency to provide the colliers or barges necessary for water-borne coal. Unless this work is skilfully handled there is always danger of heavy demurrage charges at loading or discharging ports. Whenever possible it would be desirable to make arrangements to handle incoming water-borne coal through existing dock facilities on some suitable commission basis, safeguarded by stipulations that will insure the proper and prompt handling of the coal.

It is desirable that the coal docks be equipped with modern facilities for loading railroad cars as well as for discharging cargoes. In view of the excessive congestion which occurred in 1920 at the tidewater docks, due to the fact that the facilities for receiving coal from the mines at the docks and discharging it into vessels were not equal to the combined demands made on them for simultaneous shipment of water-borne coal to New England and by an exceptionally heavy export trade, it

is possible that New England consumers would find it desirable to lease enough existing dockage facilities to insure prompt shipments or to assist in financing the construction of additional docks.

As has already been stated, the essence of the co-operative plan is to make the transactions carried on large enough so that it will be worth some person's while to see that they are carried on properly. The following advantages may be expected:

(1) Getting coal for less than the spot market price or that for short-term contracts, or contracts made for small amounts by making use of long-term contracts for large amounts. Under conditions ensuring a producer of a constant market for a large part of his output he can afford to and does make a relatively low price.

(2) A more careful observance by the producer of the terms of his contract, both in regard to prompt and regular shipments, and also in regard to quality and preparation.

(3) Prompt and regular distribution of coal, and the protection afforded by a joint reserve storage maintained normally at the minimum safety mark to protect all co-operators, and increased at times when conditions indicate that such a precaution is necessary.

Such advantages could not be obtained without undue expense by any but the largest consumers if they acted singly, and would be wholly out of reach of small and medium-sized consumers, because of the magnitude of the transactions involved. They are, however, possible through intelligent co-operative action.

Bradley Stoughton Resigns as Secretary of American Institute of Mining Engineers

AFTER eight years of service as secretary of the American Institute of Mining Engineers, now known as the American Institute of Mining and Metallurgical Engineers, Bradley Stoughton, who took the office at a financial loss, has decided to resign and undertake other duties. The board of directors has with regret at length accepted his resignation, which was first tendered Feb. 17, 1920. In a notice to members it expresses its "appreciation of his long and efficient service."

He came with the institute in 1913. In that year there were 3,500 members; now there are more than 9,000. Then there were four local sections and today there are twenty-six and the number is rapidly increasing. At that time only one technical committee, the Iron and Steel Committee, existed. The number of such committees has increased to eighteen. Up to 1913 the number of volumes of transactions published per year averaged one. From 1914 to 1921 inclusive the average has been three.

The monthly magazine has quadrupled during the same period. The attendance at meetings was 220 in 1912; now it is over 1,100. A budget of \$55,000 a year represented its activities in 1912. Now the receipts are figured at \$208,000 and its expenses at \$198,000. The employment department did not exist in 1912, but today it is large and important.

The institute concerned itself solely with production problems prior to 1913, now it is not only represented on the Engineering Council, to which it affords financial support, but it has committees on mine taxation and coal stabilization. It has others which collaborate with the Naval Consulting Board, the National Research Council and the American Engineering Standards Committee.

There were twenty-two affiliated student societies in 1912, but their connection with the institute was so slight as to be of minimum value to both. Now there are thirty-seven affiliated student societies in active co-operation with the institute through correspondence, publication of meet-

ings in the monthly magazine, visits and addresses of the president and secretary and in other ways.

With this remarkable record of progress naturally the board of directors regrets this resignation, which will take place as soon as a suitable successor has been found.



BRADLEY STOUGHTON

Resigning secretary, A. I. M. E. Born in New York City Dec. 6, 1873; received his Ph.B. degree from Sheffield Scientific School in 1893 and B.S. from Massachusetts Institute of Technology in 1896; became teacher at latter college 1896; assistant to Prof. H. M. Howe at Columbia University 1897; metallurgist, Illinois Steel Co., 1898-99; chief of cost-statistics division, American Steel & Wire Co., 1900; manager, Bessemer steel department, Benjamin Atka & Co., Newark, N. J., 1901; consulting engineer 1902-1917; author of "The Metallurgy of Iron and Steel," 1908.

The Weather Vane of Industry

News Notes Chronicling the Trend of Industrial Activities on Which Depends the Immediate and Future Market for Coal

THE GEOLOGICAL SURVEY'S stock-taking showed that on April 1 the public utilities probably were in the strongest position of all classes of coal consumers. At the end of the first quarter electric utilities and coal-gas plants, as a class, carried larger stocks than on Jan. 1. A group of 268 electric plants carried on April 1 nearly twice as much coal as in June, 1920, and even a little more than in early 1919. A group of 102 representative coal-gas plants had on April 1 of this year more than three times as much as in June, 1920.

At the present rate of consumption the electric utilities canvassed had on hand as of April 1 a supply sufficient for six weeks and six days' operation, and for the coal-gas plants the supply was enough for nine weeks and three days. This was in sharp contrast to what was happening at industrial establishments, including byproduct coke ovens and steel works. Among these consumers there was an almost universal draft on stocks during the first quarter of the year.

As to what the public utilities have been doing since April 1 we have no knowledge, according to Director Smith of the Geological Survey in a letter to J. W. Lieb, vice president of the New York Edison Co. Dr. Smith also added: "It is clear, however, that consumers as a whole have depleted further their reserves.

"There is a sort of critical level of stocks—a critical anchorage temperature, to borrow a phrase from hydro-electric operation. Exactly what the critical level is we cannot say until we have been keeping records longer. But we can say, I think, that the critical level lies somewhere between 30,000,000 and 40,000,000 tons.

"Now what is the present level of stocks? The Geological Survey's inventory showed that on Jan. 1, 1921, it was not more than 48,000,000 and not less than 42,000,000—say about 45,000,000 tons. By April 1 stocks had dropped to somewhere near 37,000,000 tons, and since then they have doubtless decreased further. In other words, while we can tell from the tone of the market that the critical level has not been touched, it is plain that stocks are fast approaching it, and that it would be unwise from the consumer's point of view to let them sink much lower.

"There are three important elements in the cost of coal laid down at the consumer's door, which may conceivably change before long—the wage scale, the freight rate, and the operator's margin.

"With adequate stocks, however, the public utility is and will be in a strong position to buy, whatever the level of costs and whatever the market position of other consumers. The public utility cannot shut down, and the public must pay for the coal the public utility buys, hence from the public standpoint the double function of large stocks: to keep up service and to keep down prices."

Cotton Mills Work Steadily

The Brookside Cotton Mills, Knoxville, Tenn., resumed work May 31 on an open shop basis. The mills will operate fifty-five hours a week. They had been closed since April 11, when 1,500 workers struck because of a reduction in wages. Kinston, N. C., cotton mills are working five days a week, an increase from the

three-day schedules effective earlier in the year. Manufacturers regard prospects as "gradually improving."

Carpet Company Works Full Time

The Firth Carpet Co. at Firth Cliffe, N. Y., which had been running four days a week for some time, started last week on full time. Wages have been cut 20 per cent.

Car Loadings Increase

A further increase of 18,172 in the number of cars loaded with revenue freight during the week ended May 21, compared with the preceding week, is shown by reports received by the Car Service Division of the American Railway Association. Total loadings for the week were 768,330 cars. This, however, was a decrease of 93,700 cars compared with the corresponding week of last year and approximately 9,000 cars under that for the corresponding week of 1919.

To Start Mobile Coal Terminal

Work on the substructure of the large Government coal terminal on Blakely Island, near Mobile, Ala., will be started at once. It must be completed within 150 days from the time the successful bidder, Hampton Reynolds of New Orleans, receives official notice that his bid of \$100,000 has been accepted. Major Earl North, United States engineer in Mobile, has announced that he is expecting authority from Washington soon to let the contract for the machinery, which will be one of the largest items of expense.

Cleveland to Make Artificial Silk

Cleveland reports state that it is understood that financial interests in New York plan to issue \$500,000 in notes for the new Industrial Fiber Corporation, which is to build a plant in that city for the manufacture of artificial silk.

Beaver Mills Speeding Up

The Beaver Mills Corporation of Northside, Cohoes, N. Y., reopened its plant in part Monday, June 6, and the entire plant is expected to be in operation before June 20. Between seventy and eighty employees reported for work and more than 400 will be employed before the end of the month.

Fall River Mills Hum Again

The Flint mills of Fall River resumed operations May 31 after having been wholly shut down since April 14. The Shove mills at Fall River, shut down two weeks ago, operated in full last week.

Southern Cotton Mill Strike On

Approximately 10,000 cotton mill employees in Charlotte, Concord and Kannapolis, N. C., went out on strike June 1 in protest against recent reductions in wages, which are said to aggregate a cut of 36 per cent. The strike movement does not extend to mills of Gaston County, where operatives are not unionized, nor to Monroe, Lincolnton and Cleveland, where the United Textile Workers organization is said to be at minimum strength.

Bituminous Demand Unlikely to Boost Prices Sharply Or Tax Railroad Facilities Before July, 1922*

BY GEORGE H. CUSHING†

HAVING taken into most careful account present financial and industrial conditions at home, certain well-defined tendencies in business, political and economic conditions abroad and the coal statistics as reflecting business generally for a period of fifty years, I have arrived at the following conclusions and convictions touching the near future of the coal industry:

(1) A general and pronounced revival of business at home is out of the question until after the middle of July, 1922; it will be unprecedented if it comes prior to July, 1923.

(2) No dependable revival of the export business is possible until political conditions in Russia have been stabilized.

(3) Without a marked revival of domestic or foreign business or both, the existing capacity of the railroads cannot be so seriously taxed as to create another coal shortage.

(4) Except between Jan. 15 and March 15, 1922—when industrial consumers will be buying coal for storage in anticipation of a strike of the bituminous miners on April 1, 1922—the bituminous mines will not, during this coal year, produce in excess of 50 per cent of their rated capacity or in excess of 15 per cent of their normal production.

(5) By the end of 1923 the home market will express a demand for bituminous coal considerably in excess of 600,000,000 tons per annum; the foreign market should want 40,000,000 tons; and it will be with difficulty that we meet home demands. Then will follow a protracted period—hardly less than five years—during which bituminous coal prices, uniformly, will be high.

The only subject concerning which there is room for a reasonable doubt is the time when business generally will revive. He is an optimist who believes it will come by the middle of July, 1922.

Before arriving at the opinions which suggest these sweeping statements, the following facts—part of the common knowledge of the hour—were verified and weighed:

PROSPERITY DEPENDENT ON PUBLIC'S BUYING POWER

(1) It is axiomatic that business prosperity depends wholly upon the liquid and unencumbered buying power of the people. Unless the people can buy, the producer is helpless. The buying power of America has been seriously impaired by two things:

(a) Thirty million American people depend wholly upon the farms. The farmers lost money on part of their 1919 crop, on all of their 1920 crop and on all cattle bought, for feeding, in the spring of 1920. As a result, all of the money they will earn this year will have been spent before they get it. They will have no money for anything beyond bare necessities and hence they cannot patronize industry.

(b) Some 2,500,000 industrial workers are now out of employment; their number is increasing each week. This deprives at least 10,000,000 persons in cities of any visible means of support. They can buy nothing but actual necessities.

This means that 40,000,000 of American people are without any buying power for another year. Business generally cannot revive and boom while that buying power is inactive.

(2) Without an active home demand, a business revival must rest in part upon large exports. Industrial revival in Europe—upon which must depend our growth of exports—is impossible until there is available to the European manufacturer a supply of raw material, which he can use with profit, and cheap food to the European worker. This raw material cannot be carried in from overseas at existing high freight rates and still be used profitably. Therefore the necessary raw material must be obtained from sources close

to the Continent and from sellers whose economic and financial conditions match those of the buyer. Russia is the only large and handy storehouse of this needed material. Its abundant supplies cannot be made available until its government has been stabilized. It would be foolish to try to say when this will occur.

(3) On the average, 23 per cent of the cars owned by class 1 railroads have been idle since April 1. On the average, 13.5 per cent of their cars are now in bad order. In other words, 36.5 per cent of their cars are now out of service, and still the country's business is done. There can be no danger of a shortage of coal or of any other commodity—and upon a shortage alone depends soaring prices—until we have employed the idle cars, have exhausted all possibilities of a faster movement of cars and have done the utmost to repair the cars which are in bad order. We have such an asset in idle and slightly-damaged cars and so much leeway for increasing the movement of cars per day that it is pure romance to predict now any such shortage of coal as will advance prices sharply.

If another famine is declared unthinkable, it is pertinent to inquire what, in a bituminous coal sense, we have immediately ahead.

It has been said often—more on logic than on facts, incidentally—that in no period of boom has our production ever risen as much as 10 per cent above "normal." It has also been said that in no period of depression has our production dropped as much as 15 per cent below "normal."

TONNAGE THE INDEX OF THE PEOPLE'S ACTIVITY

It is the tonnage which measures the activity of the people. It is the price which indicates their moods. Since I am dealing with men's activities, rather than with their moods, all my statements are upon the tonnage basis alone. If these economic beliefs hold true, it follows that the greatest spread we ever need expect is 25 per cent in tonnage. We need expect that much of a spread only when a period of greatest boom is followed instantly by a period of greatest depression:

Last year we had the highest coal prices in history. For the last two months we have had amazingly small coal production. Last year railroads worked their equipment to its maximum efficiency. Today 23 per cent of that equipment is lying idle.

These two facts seem, at first, to indicate that we have encountered, end to end, a period of greatest boom and of greatest depression. Therefore these two facts seem to suggest that the demand for coal in 1921 will be 25 per cent less than it was in 1920. However, before I accept a statement that production in one year was a given percentage above and in another year was another percentage below normal, I want to know what is "normal." In search of that elusive quantity, we may have to tramp over much ground. To save time, I ask you to take into account—without my repeating either here—two things which have been said to you previously:

(1) The growth of demand for bituminous coal bears no measurable relation to the growth of population. The growth of population has been slow and small. The growth of demand for bituminous coal has been large and fast. Therefore, the absence of growth of population in the last five years—due to the absence of immigrants—has no possible coal significance. However, the growth of coal demand has always borne a close relationship to our increased use of power. At no time in history have we resorted more to the use of power and less to the use of men than during the last five years. Therefore, using the latter as our measuring stick, the use of coal in the last five years should have grown faster than at any other time in our history.

(2) The keynote of my memorial to Secretary Hoover

*Abstract of address at annual convention of the American Wholesale Coal Association, Washington, June 7-8, 1921.

†Managing director, American Wholesale Coal Association.

was that since bituminous coal is used mainly to support industry, the fluctuations in coal production follow exactly the fluctuations in all business. As a matter of fact, coal production is but a mirror in which is reflected the industrial activities of the country.

In search of a normal rate of growth of bituminous coal production—and hence of industrial expansion in America—I have gone back over the coal reports for the last fifty years. I have divided that larger period into ten five-year periods. I have computed in the customary way the average production of each five-year period.

I was amazed to learn that—judged by every prophecy of history—coal production during the last five years was below rather than above “normal.” With its price history in mind, I was amazed to learn that the coal production for 1920 even was below “normal.”

This leaves us face to face with the amazing fact that 1920 rather than being a period of business boom was actually a period of subnormal business.

At any rate, when an attempt is made to estimate the demand for this year, we do not have to shrink the tonnage of 1920 enough to offset the effects of boom in that year. We start at normal—or below it—and from that point begin to shrink the tonnage enough to match an existing period of depression. This means that we have to shrink the tonnage a maximum of 15 per cent instead of a maximum of 25 per cent. That naturally makes a major difference.

In estimating the demand, we must take into account the fact that the wage contract of the miners' union will expire on March 31, next. A new contract will have to be made. Regardless of the possibilities or probabilities, business men everywhere will be prone to believe that the miners will strike on April 1 rather than accept the inevitable wage reduction. The business people, therefore, will buy for storage enough coal to last them another month.

INDUSTRIALS EXPECTED TO STORE 35,000,000 TONS

Therefore, in the early months of 1922, industrials will buy for storage at least another 35,000,000 tons. This will bring the total demand up to about 500,000,000 tons of bituminous coal for the coal year which started with April 1, last.

Thus, we have two demands to satisfy. One is the demand for 465,000,000 tons of bituminous coal for current consumption. The other is a demand for 35,000,000 tons for storage against the possibility of a strike April 1, next. The demand for immediate consumption may be expected to express itself progressively throughout the year—slowly at the start and much more rapidly as winter approaches. The demand for storage coal will force itself upon the market so soon as the possibilities of labor trouble are reasonably measured.

Therefore, it is inevitable that we shall have a dead market until autumn, a fairly lively market during the autumn and early winter, and a flurry in the market—not serious, however—after the middle of January.

Since the demand for the 35,000,000 tons of storage coal is contingent solely upon the possibility of a strike and since that cannot now be forecast with any accuracy, we need concern ourselves between this date and Jan. 1 with only two things:

(1) The minimum demand, now, for 465,000,000 tons of bituminous coal for this year's use.

(2) The demand for any additional amount of bituminous coal which may be created by any revival of business.

I personally believe we are going further into depression before there is any recovery. This belief rests on the weekly report of insolvency proceedings. Therefore, I do not believe it possible that we will face any increased demand from business until after December. If that proves correct, we will have to content ourselves until after December with supplying merely the monthly and weekly quota of the 465,000,000 tons of coal. On this basis, I believe that we will have a minimum average weekly demand for this year of 8,950,000 tons of bituminous coal. The maximum average weekly demand probably will not exceed 10,000,000 tons.

After Jan. 1, 1922, we will still have to supply the minimum of 8,950,000 tons per week, and, in addition, 3,500,000

tons per week to take care of the storage demand incident to preparations for a strike. Thus in January, February and March next year we may face a weekly demand for as much as 12,500,000 tons. That would be rather difficult to supply if business, generally, were booming at that time. Since business, generally, hardly will be booming—certainly it will not be if present indications carry—the railroads will experience no great difficulty in moving that much coal.

However, the American people have the will to increase their business; they have the facilities—including the manpower and the machinery—to expand their trade.

Forehanded Buying and Equalized Distribution of Coal Advocated by C. L. Couch

REVIEWING the activities of the American Wholesale Coal Association during the last year, C. L. Couch, president, addressing the annual convention of the association at Washington, June 7, 1921, said in part:

“We have done as far as the brief space of a year will allow in cementing the ties of friendship between the various business organizations. Under specific instructions from the Executive Committee or under instruction from the president your managing director has cultivated friendly relations with other business organizations in all ways which are proper.

“At the meeting in Washington on July 20, 1920, the Executive Committee empowered the president to appoint a committee to co-operate with the other branches of the coal industry. It has for a long time seemed to us that there was too much of a disposition among the various branches of the coal industry to consider themselves separate and distinct from each other. When the industry was confronted by a common enemy, this became a cause of grave peril to all branches.

“The recent administrations of the various coal associations were in full accord on this subject. There was not, unfortunately, occasion for carrying this unity of purpose into any real action. The opposition by which we were confronted acted so precipitately that each matter of defense was an emergency which had to be met as the emergency demanded. There has been no time for deliberation on how to meet a situation. Even now we are practically denied time for any deliberate or carefully-considered action and study, even though the questions raised are of utmost importance to us and to the whole people. Thus in itself this desire to rush coal into a commitment is one of the grave matters before us.

“At the meeting of your Executive Committee on July 20, 1920, your committee was called upon to decide a matter of policy in connection with our relations with the public. The immediate cause for this action was a statement which had but recently been made by your managing director with respect to the future of the coal market. The statement in question had declared that there was no danger of a coal famine; that there was a reason, but no excuse, for the high prices which were then being charged.

“The Executive Committee believed—and in this respect it was in thorough accord with your managing director—that any prophecy at any time is an extremely venturesome undertaking. It is something upon which any association must hesitate to enter. Indeed, it is something which can be resorted to only when a matter of grave public policy is involved. However, when such a matter of policy is involved, its importance must outweigh our timidity. So we approved the statement in question, doing so for the purpose of inaugurating the public policy of this association which, as we drew it, may be briefly stated as follows:

“We believe it is prudent at all times for consumers of coal to be forehanded in their buying. Certainly we believe it to be wise for consumers to take advantage of favorable conditions in summer to supply themselves with their winter coal. We believe, furthermore, that it is economically sound to strive for a more equal distribution of the annual production of coal among the months.

“These considerations would, under ordinary circumstances, induce us to lend our support to any practical movement which tends to increase the shipment of coal in

the spring and summer months to the end that the burden upon the railroads might be lessened in the autumn and winter months.

"However, we were not willing last summer to encourage summer storage at the cost of creating a panic among buyers such as would cause a runaway market. We could not emphasize a danger which is only imaginary when still in future and which cannot be said to be a real danger until prophecy has become something of an exact science."

National Coal Committee Discusses Assigned Cars and Changes in Transportation Act

THE Railroad Relations Committee of the National Coal Association was in session in Washington June 6, 7 and 8. Ways and means were considered for discharging the responsibility, placed on the committee by the New York convention, for presenting the position of the National Coal Association to the Interstate Commerce Commission with respect to assigned cars. Plans were laid covering the nature of the data which are to be presented and the methods to be used in its procurement, as well as the form in which it will be presented.

This was the first meeting of the committee under the leadership of E. C. Mahan, its new chairman. As a result, the whole transportation situation was reviewed. The principal discussion revolved around the assigned-car matter, but important consideration was given mine-rating and car-distribution rules. Proposed changes in the Transportation Act were discussed, as was the matter of co-operating with other traffic organizations in that connection.

New York Wholesalers Express Opposition to Frelinghuysen Stabilization Bill

THE New York Wholesale Coal Trade Association on June 3 adopted the following resolutions on the Frelinghuysen coal-stabilization bill:

That the Frelinghuysen bill discriminates against the coal trade inasmuch as it invests the President with inquisitorial and regulatory authority in respect of that trade and not other lines of business.

We are opposed generally to governmental interference in business and especially with the coal business, as the history of such interference has always been disastrous not only to the industry, but to consumers of coal, as well as laying a tremendous burden upon taxpayers.

That there should be urged upon the representatives of the present administration the desirability of carrying out pre-election promises to have "less government in business and more business in government."

Allport Goes Back to Washington State

DIRECTOR EDWARD CLIFFORD, of the State Department of Labor of the State of Washington, on the morning of May 23 received formal notice to the effect that the conference of mine workers and operators agreed on May 21 to accept his plan for the mediation of their dispute. The notice also declared that the two parties ratified the personnel of the commission suggested by him. The commission will consist of J. H. Allport, who has left Pennsylvania for Washington; Robert Harlin and Ernest Newsham, who will represent the mine workers, and N. D. Moore and D. F. Buckingham, who will be the operators' representatives.

Five National Coal Association Delegates to International Chamber of Commerce

IN addition to J. D. A. Morrow, who will sail June 11 for Europe to attend the meeting of the International Chamber of Commerce, the National Coal Association will also be represented by the following delegates: C. B. Ebbert, sales manager, White Oak Coal Co.; W. T. Coe, London representative of the Consolidated Coal Co.; W. K. Field, president Pittsburgh Coal Co.; and John A. Donaldson, vice-president Pittsburgh Coal Co. These latter members of the association will be in Europe on other business at the time of the convention and have consented to arrange their affairs so as to be in Paris at the time of the meeting.

Traffic Executives to Confer on Request of Shippers to Reduce Freight Rates

THE long-deferred conference of traffic executives of the Eastern, Western and Southern territories was held in Washington June 2. The Eastern traffic territory was represented by George Ingalls, the Western territory by L. J. Spence and the Southern territory by Lincoln Green. They listened to the request of shippers of road and building materials for a general horizontal reduction in freight rates covering those commodities. The traffic executives made no declaration as to their conclusions, but promised to give the matter immediate and exhaustive consideration. It was the contention of the shippers that the present freight rates have reduced the volume of business to the point where the returns to the railroads are much less than would be the case if lower rates were allowed and a larger volume of business handled.

House of Representatives Grants Hoover \$250,000 to Promote Foreign Trade

WHILE it took a special rule to do it, the House of Representatives has approved the supplemental estimates for the Department of Commerce, recommended by the Committee on Appropriations, for extending the export trade, for investigating structural material, for assisting in the establishment of industries developed by the war and for standardizing electrical and mechanical devices used in industries.

Opposition to the items was entirely on political grounds on the plea that the real object of these appropriations was to create positions for the faithful. This attack did not have the backing of the Democratic leaders, however, as Representative Byrnes, the ranking Democrat of the Appropriations Committee, declared that "This is not a question upon which we should play politics. The business of the country and the interests of the country demand the promotion and extension of our commerce, domestic and foreign. I believe we should give every possible aid to the administration in developing our commerce in the interests of the whole country. I believe the present Secretary of Commerce, if given the opportunity, will promote and extend greatly our commerce and will render a great service."

The fight on the \$250,000 for the Bureau of Standards was even more intense than was that on the \$250,000 for promoting export trade. A filibuster attempted against the items was overridden by the bringing in of a special rule making the items in order.

To Hold Jersey Coal Trust Hearing Today

ACCORDING to an announcement made Friday, June 3, in Trenton, N. J., the first hearing of the legislative committee authorized to make an investigation as to whether a coal combination exists in New Jersey and the reason for the high prices of coal will be held at the State House in Trenton today.

AS THERE SEEMS to be some confusion in the minds of the public as well as the coal trade by reason of the recent publication of the petition in bankruptcy of the old Tidewater Coal Exchange, the Tidewater Coal Exchange, Inc., calls the attention of the coal trade to the fact that the publication of bankruptcy proceedings against the Tidewater Coal Exchange refers to the old Tidewater Coal Exchange, which went out of existence, so far as active operation is concerned, on April 30, 1920, since which date it has been in the process of liquidation. These proceedings have no bearing whatever on the operations of the Tidewater Coal Exchange, Inc., which was incorporated under the laws of the State of Delaware and commenced to function on May 1, 1920, to carry on the plan of pooling bituminous coal. In the organization of the Tidewater Coal Exchange, Inc., provision was made for all such exigencies and no such condition of affairs as seen to exist in the liquidation of the old Tidewater Coal Exchange could possibly arise, under its by-laws, rules and regulations.

Coal Men Denounce Singling Out Coal for Regulation; Voluntary Returns Favored

PREPARATORY to entering the conference with Senator Frelinghuysen and Secretaries Fall and Hoover representatives of the National Coal Association, the American Wholesale Coal Association, the National Retail Coal Merchants Association and the anthracite operators met in Washington June 6 to discuss the Frelinghuysen bill. No conclusions were announced, but it is understood that any attempt on the part of the Federal Government to single out the coal business for regulation was denounced in each group. It also was the consensus of opinion in each group that better results could be obtained by having statistical returns made on a voluntary basis, rather than by attempting their collection by compulsion. The anthracite group, taking the Frelinghuysen fact-finding bill as a basis, is understood to have drafted an omnibus measure which will make the provisions of the bill apply to all industries.

It also was revealed that general apprehension is felt as to the possibilities of a liberal interpretation on the part of the President of the term "emergency." It is understood that Secretary Fall will suggest that the bill be changed to authorize the Department of the Interior to perform whatever functions the bill may finally provide for, instead of the Department of Commerce, as provided for by Senator Frelinghuysen, and it is not expected that there will be any opposition to this amendment.

Mine Owners Continue to Make Settlement Offers to British Coal Strikers

ON JUNE 5 the deadlock continued in the British coal strike, although a further development in the dispute, and one which was considered likely to open the way to a settlement, took place on that day, when Evan Williams, president of the Mining Association, sent a letter to Frank Hodges, secretary of the Miners' Federation, urging the importance to the miners of not losing the government's offer of £10,000,000, and suggesting that the miners' executive and the owners meet and talk matters over. Mr. Williams called a meeting of the Mining Association for June 6, at which he invited the miners' executives to be present.

The miners' executives promptly accepted the owners' invitation to meet them, and at the end of the afternoon sitting a statement was issued to the press saying that the discussions were being held in a friendly spirit and the conference would be resumed June 7.

It is understood that the conference was chiefly occupied with examining and defining the outstanding matters at issue, and that very little argument arose about the respective points of view. It is considered possible that the miners may call a national delegate conference and, if necessary, arrange for a national ballot on the owners' latest offer.

These are foreshadowings of peace, but it would be premature to jump to the conclusion that a settlement is in sight. Both sides, however, are anxious to secure a settlement, if possible, within the time limit of the fortnight during which the government's offer of £10,000,000 is available.

A significant admission was made by Thomas Spencer, trustee of the Derbyshire miners. He said it was time the miners boldly faced the fact that they were dead beaten on the demand for a national pool. The country and government would not have a pool at any price, he said, and it was folly to think they could be driven into it.

Meanwhile, in various mining districts there has been a resumption of work. The Swanwick collieries in Derbyshire were working again June 6, but the miners' union was making efforts to prevent the men from going down.

The miners' executive notified Premier Lloyd George June 3 that the various mining districts had rejected the government proposals for a settlement. On the same day the mine owners declared themselves "unalterably opposed" to a

national pool and a national settlement of wages, suggesting conciliation boards for the various districts, but made some new offers, the most important being to take the average costs other than wages for the first three months of the year instead of for March alone. This averaging of costs it was thought might so reduce the cost per ton and increase the wage fund that the miners would gain approximately a shilling per shift over the whole country, while in South Wales the gain would be two shillings per shift. The owners also agreed to provide a subsistence wage for the low-paid workers in each district.

This was an advance on previous offers, going a long way toward meeting the complaint of the miners that on the original proposals some of their members would receive less than a subsistence wage. It was thought that the owners' offer indicated points on which an agreement between the parties could be built if a joint meeting of the owners and miners was held.

The lifting last week of the embargo placed by dock workers on coal imports several weeks previous also helped to relieve the tenseness of the situation.

Indiana Bituminous Mine Workers Will Meet

PLANs are being made by the officials of District No. 11 of the United Mine Workers of America for the regular biennial convention of delegates from all the local unions and also from the operators' association of this district. This is the twenty-eighth consecutive and fifth biennial convention of the mine workers in the Indiana field. It is believed that the convention this year will be the largest ever held. Credentials and circular calls for the convention are being mailed out by William Mitch, secretary-treasurer of the organization, and other plans are being made by the official board. The convention is called for 10 a.m., Tuesday, July 12. It probably will remain in session the whole week. The meetings will be held at the Knights of Columbus hall at Terre Haute. Constitutional questions will be discussed and work preliminary to the international convention also will be considered. The powder question already has been settled and it is not probable that the conference will deal further with it.

J. W. Howe Resigns as Commissioner of Tidewater Coal Exchange, Inc.

J. W. HOWE has sent his resignation as commissioner of the Tidewater Coal Exchange, Inc., to the Executive Committee of that organization. Mr. Howe has been commissioner of the Exchange since its formation, and previously occupied a similar office in the exchange when it was a Federal institution.

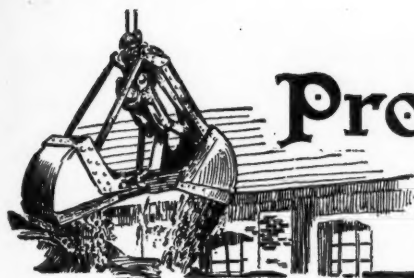
Mr. Howe's successor has not yet been named by the committee. It is said there are several candidates for the position, among them R. A. C. Magruder, the present deputy commissioner; L. A. Snead, commissioner of the Sewalls Point Exchange, and Dr. H. M. Payne.

Supreme Court Adjourns; No Decision in Coronado Coal Co. Case

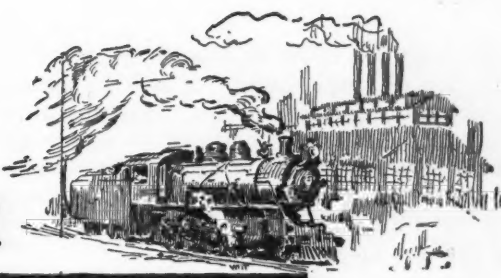
THE U. S. Supreme Court adjourned on Monday until October 3 without handing down a decision in the Coronado Coal Co. case, appealed from the Arkansas courts. The coal company obtained treble damages from labor unions for destruction of its property in a strike, whereupon the labor unions appealed the case, and while it was argued in the Supreme Court early in the term the court adjourned without announcing a decision.

THE INTERSTATE COMMERCE COMMISSION has suspended until Sept. 29 various tariffs on anthracite which seek to make increases and reductions ranging from 14c. to 28c. per ton from Pennsylvania to points in New York State.

CREATION of a new Federal Department of Mines was proposed in a bill introduced Monday, June 6, by Senator Nicholson, Republican, of Colorado.



Production and the Market



Weekly Review

BITUMINOUS markets suffered a further slump the first week of June. The tendency for weeks past has been to restrict purchases to the barest needs, which have been reduced to a minimum by the industrial depression. The impending reduction of railroad men's wages on July 1 is having a growing effect on the coal market. Expectations of lowered rail rates, to follow closely on the heels of this wage cut, the hope that coal prices will come down even further, and continued talk of possible legislation pertaining to the regulation or supervision of the industry all tend to hold back an already sluggish coal season.

Coal Age index of spot prices declined to 96 as of June 7, a drop of four points from the figure of 100 of the week preceding. There were ten declines and only three advances in the quotations making this index figure. This is the lowest figure of the year and is occasioned by the greatly weakened steam market, which is unwillingly absorbing the heavier production of fine coal being forced upon it.

Production is practically stationary—for three successive weeks the output has been maintained around the 8,000,000-ton mark, which is considerably more than can be easily absorbed under the present industrial conditions.

An end is now in sight to the heavy movement in Lake

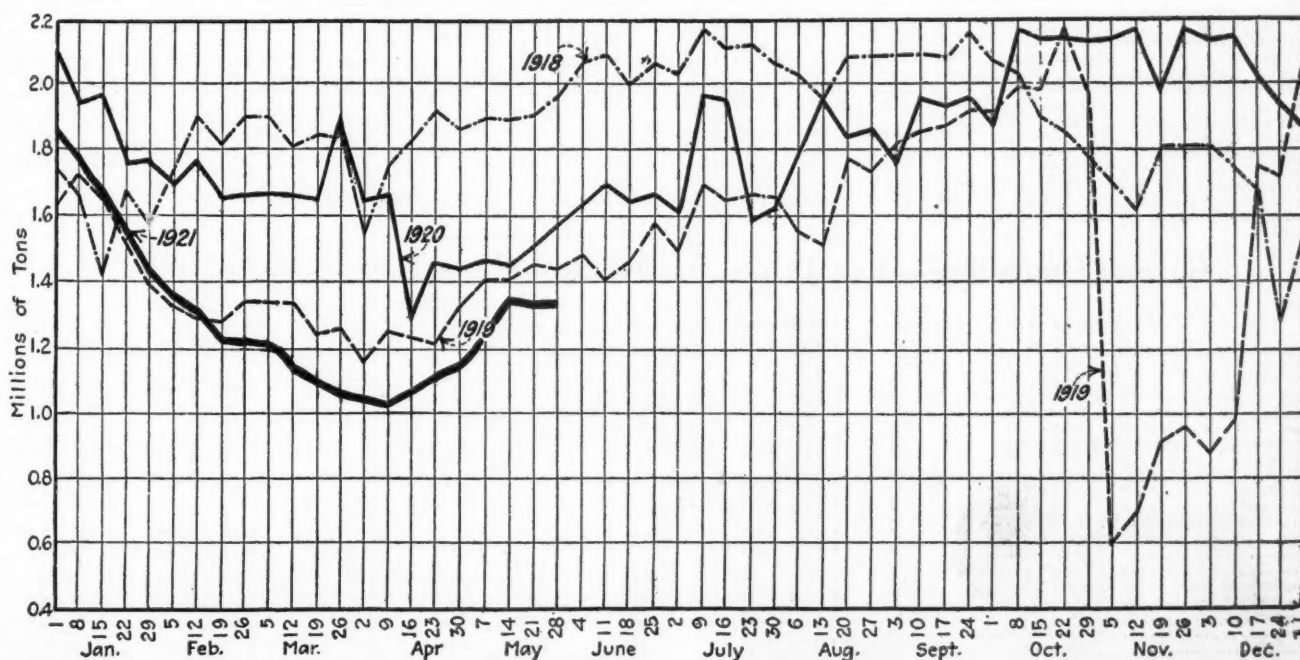
coal, which has been going forward in record quantities since the opening of navigation. Stocks are accumulating rapidly on the Head-of-the-Lake docks and shipments to the interior are extremely light. Not only are requirements of the Northwest low, as in other sections of the country, but the adjustment of rail rates on shipments off the docks, scheduled to become effective July 6, is delaying what meager purchases might otherwise be made.

Congestion of loaded cars at the Lower Lake docks is growing, as vessels are not offering because of the inactive ore market, which is unable to furnish down cargoes. This congestion has made necessary a revival of the permit system under the jurisdiction of the Ore & Coal Exchange. Permits to ship to the Lake are issued only where a clear route is indicated.

EXPORT, COASTWISE AND BUNKERAGE CALL SLUGGISH

That British users have overestimated their needs of American coal due to the strike is being shown by the weaker demand at Tidewater. Pocahontas producers are being hard put to maintain their comparatively high rate of production and prices for this coal on the Inland market have taken an abrupt drop this week. New England coastwise business is extremely sluggish and the bunkering call also has slumped considerably.

Daily Average Production of Bituminous Coal*



*From weekly report of Geological Survey.

At least one union field is this month to consider the question of lower wages. Miners in the central Pennsylvania district have called a meeting June 12 to discuss the situation as outlined by the central Pennsylvania association. This is the second time that these operators have called the miners' attention to the desirability of a readjustment, their first effort being refused by the men on April 30.

The rising curves of railroad earnings and traffic, and the declining operating expenses which will be further lowered by the 12 per cent wage cut, should put the roads in better shape to come into the coal market.

Demand for anthracite domestic sizes continues active, although orders are mainly for immediate shipment. Retail stocks are growing and unless the householder takes up the storage idea at an early date a midsummer slump is inevitable. The usual 10c. monthly advance was made on June 1 by the "companies," and the "independents" followed suit with larger increases.

BITUMINOUS

Production for the week ended May 28 was 8,053,000 net tons, or slightly in excess of the output for the week preceding. This is the third successive week in which produc-

tion has been around 8,000,000 tons. The first week in June was marked by a slump in production due to the observance of Memorial Day. However, recovery was rapid, and on Tuesday, May 31, loadings totaled 26,452 cars, or practically the same as for the Tuesday of the week preceding.

The Northern and Middle Appalachian output for the third week in May increased slightly. Some 5,125,000 tons were produced, as against 5,096,000 tons the week before.

Shipments of bituminous coal via the Hudson gateways destined for New England were 2,898 cars during the last week of May. This is a decline of 190 cars compared with the preceding week and much less than the shipments for the corresponding week in 1920, when 4,433 cars were forwarded.

Hampton Roads dumpings for foreign account during the week ended May 28 were 356,514 net tons—267,225 tons of cargo coal and 89,289 tons for bunkers. This was a decrease from the figure of the preceding week of 45,520 tons; however, dumpings were well above the weekly average during September, 1920, when the export market was active.

Lake dumpings for the week ended June 4 were 960,524 net tons cargo and 24,967 tons fuel, making a total of 985,481 tons. The dumpings for the season are 5,801,967 tons, an enormous increase when compared with the same period in 1920, when 2,040,053 tons were dumped.

The bulk of this coal is being sent for storage by mines

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F. O. B. Mines

Low-Volatile, Eastern	Market Quoted	May 3 1921	May 24 1921	May 31 1921	June 7 1921†
Pocahontas lump.....	Columbus.....	\$5.40	\$5.50	\$5.75	\$5.50@ \$6.00
Pocahontas mine run.....	Columbus.....	3.35	3.50	3.50	3.00@ 3.60
Pocahontas screenings.....	Columbus.....			2.70	2.50@ 2.75
Pocahontas lump.....	Chicago.....	5.00	5.25	5.25	5.00@ 5.50
Pocahontas mine run.....	Chicago.....	4.00	3.75	3.75	2.50@ 3.75
*Smokeless mine run.....	Boston.....	6.00	6.40	6.50	6.25@ 6.60
Clearfield mine run.....	Boston.....	2.35	2.40	2.35	1.85@ 2.80
Somersett mine run.....	Boston.....	2.95	2.90	2.95	2.60@ 3.25
Pool 1 (Navy Standard) New York.....		3.65	3.55	3.45	3.25@ 3.75
Pool 1 (Navy Standard) Philadelphia.....		3.40	3.25	3.35	3.00@ 3.65
Pool 1 (Navy Standard) Baltimore.....		3.20	3.35	3.30	3.30
Pool 9 (Super.Low Vol.) New York.....		2.65	2.85	2.75	2.65@ 3.00
Pool 9 (Super.Low Vol.) Philadelphia.....		2.85	3.00	2.95	2.75@ 3.10
Pool 9 (Super.Low Vol.) Baltimore.....		2.95	3.05	3.00	2.90@ 3.00
Pool 10 (H.Gr. Low Vol.) New York.....		2.55	2.60	2.60	2.50@ 2.70
Pool 10 (H.Gr. Low Vol.) Philadelphia.....		2.65	2.70	2.60	2.45@ 2.75
Pool 10 (H.Gr. Low Vol.) Baltimore.....		2.45	2.50	2.45	2.15@ 2.60
Pool 11 (Low Volatile) New York.....		2.10	2.25	2.15	2.00@ 2.25
Pool 11 (Low Volatile) Philadelphia.....		2.30	2.45	2.35	2.25@ 2.40
Pool 11 (Low Volatile) Baltimore.....		2.30	2.25	2.25	1.90@ 2.25
High-Volatile, Eastern	Market Quoted	May 3 1921	May 24 1921	May 31 1921	June 7 1921†
Pool 34 (54-64) New York.....		2.15	2.05	2.00	1.75@ 2.15
Pool 34 (54-64) Philadelphia.....		1.95	2.10	2.10	1.90@ 2.80
Pool 34 (54-64) Baltimore.....		2.05	1.90	1.90	1.75@ 1.95
Pittsburgh sc'd. gas.....	Pittsburgh.....	2.85	2.80	2.65	2.40@ 2.65
Pittsburgh mine run.....	Pittsburgh.....	2.25	2.10	1.95	1.85@ 2.00
Pittsburgh screenings.....	Pittsburgh.....				1.75
Kanawha lump.....	Columbus.....	3.25	3.40	3.50	3.25@ 3.75
Kanawha mine run.....	Columbus.....	2.00	2.65	2.25	2.25
Kanawha screenings.....	Columbus.....			1.45	1.25@ 1.40
Hocking lump.....	Columbus.....	3.05	3.25	3.40	3.25@ 3.50
Hocking mine run.....	Columbus.....	2.00	2.40	2.25	2.00@ 2.25
Hocking screenings.....	Columbus.....			1.30	1.15@ 1.25
Midwest	Market Quoted	May 3 1921	May 24 1921	May 31 1921	June 7 1921†
Franklin, Ill. lump.....	Chicago.....	3.75	3.70	3.65	3.25@ 4.05
Franklin, Ill. mine run.....	Chicago.....	3.40	3.15	3.00	2.60@ 3.50
Franklin, Ill. screenings.....	Chicago.....	2.85	2.50	2.30	1.50@ 2.50
Central Ill. lump.....	Chicago.....	3.25	3.25	3.00	2.75@ 3.50
Central Ill. mine run.....	Chicago.....	2.95	2.60	2.40	2.25@ 2.75
Central Ill. screenings.....	Chicago.....	2.25	2.05	1.70	1.25@ 2.00
Ind. 4th Vein lump.....	Chicago.....	3.50	3.50	3.15	2.75@ 3.50
Ind. 4th Vein mine run.....	Chicago.....	3.25	3.10	2.90	2.25@ 3.00
Ind. 4th Vein screenings.....	Chicago.....	2.45	2.15	1.85	1.25@ 2.25
Ind. 5th Vein lump.....	Chicago.....	3.25	3.25	2.75	2.50@ 3.50
Ind. 5th Vein mine run.....	Chicago.....	2.95	2.50	2.50	2.25@ 2.75
Ind. 5th Vein screenings.....	Chicago.....	2.40	2.25	1.85	1.25@ 2.50
Standard lump.....	St. Louis.....	2.40	2.40	2.40	2.00@ 2.25
Standard mine run.....	St. Louis.....	1.80	1.75	1.75	1.65@ 1.90
Standard screenings.....	St. Louis.....		1.40	1.40	1.00@ 1.25
West Ky. lump.....	Louisville.....	2.60	2.65	2.55	2.30@ 2.75
West Ky. mine run.....	Louisville.....	2.10	2.20	2.10	1.75@ 2.45
West Ky. screenings.....	Louisville.....	1.80	1.50	1.65	1.50
South and Southwest	Market Quoted	May 3 1921	May 24 1921	May 31 1921	June 7 1921†
Big Seam lump.....	Birmingham.....	3.70	3.70	3.65	3.55@ 3.75
Big Seam mine run.....	Birmingham.....	2.95	2.95	2.95	2.35@ 2.85
S. E. Ky. lump.....	Louisville.....	3.75	3.90	3.80	3.50@ 3.85
S. E. Ky. mine run.....	Louisville.....	2.60	2.60	2.40	2.00@ 2.65
S. E. Ky. screenings.....	Louisville.....	1.95	1.80	1.75	1.00@ 1.65
Kansas lump.....	Kansas City.....	5.00	5.00	5.00	5.25
Kansas mine run.....	Kansas City.....	4.40	4.15	4.25	4.25@ 4.50
Kansas screenings.....	Kansas City.....	3.75	3.75	3.75	3.25

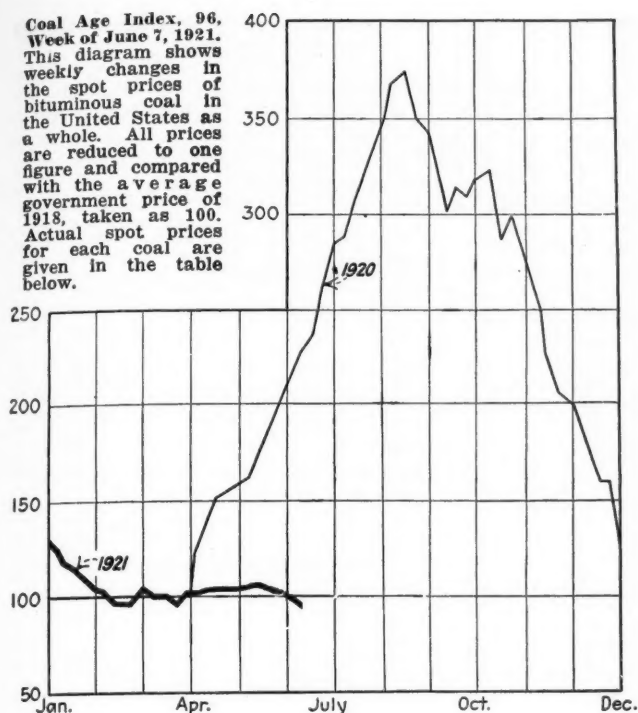
* Gross tons, f.o.b. vessel, Hampton Roads.

† Advance over previous week shown in heavy type, declines in italics.

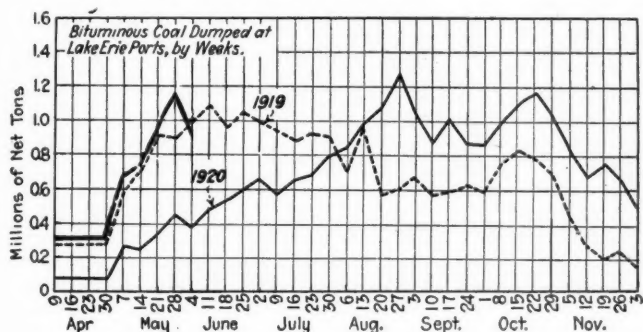
Current Quotations—Spot Prices, Anthracite—Gross Tons, F. O. B. Mines

	Market Quoted	Freight Rates	May 24, 1921	May 31, 1921	June 7, 1921†
Broken.....	New York.....	\$2.61	\$7.45@ \$7.75	\$7.20@ \$7.75	\$7.85@ \$8.15
Broken.....	Philadelphia.....	2.66	7.60@ 8.35	7.35@ 7.75	7.90@ 8.20
*Broken.....	Chicago.....	5.62	12.65	12.40	12.65
Egg.....	New York.....	2.61	7.45@ 8.35	7.20@ 7.75	7.85@ 8.50
Egg.....	Philadelphia.....	2.66	7.60@ 8.35	7.35@ 7.75	7.90@ 8.20
*Egg.....	Chicago.....	5.62	12.50	12.35	12.50
Stove.....	New York.....	2.61	7.70@ 8.35	7.50@ 8.10	8.15@ 8.60
Stove.....	Philadelphia.....	2.66	7.85@ 8.35	7.70@ 8.10	8.15@ 8.60
*Stove.....	Chicago.....	5.62	13.00	12.70	13.10
Chestnut.....	New York.....	2.61	7.85@ 8.35	7.50@ 8.10	8.15@ 8.50
Chestnut.....	Philadelphia.....	2.66	7.85@ 8.35	7.65@ 8.10	8.15@ 8.50
*Chestnut.....	Chicago.....	5.62	12.85	12.60	12.85
Pen.....	New York.....	2.47	5.00@ 5.85	5.75@ 6.10	6.00@ 6.20
Pen.....	Philadelphia.....	2.36	5.75@ 6.00	6.00	5.75@ 6.25
*Pen.....	Chicago.....	5.62	10.80	10.70	10.80
Buckwheat No. 1.....	New York.....	2.47	3.00@ 3.75	3.50	3.00@ 3.25
Buckwheat No. 1.....	Philadelphia.....	2.36	3.25@ 3.50	3.50	3.00@ 3.35
Rice.....	New York.....	2.47	2.25@ 2.50	2.50	2.00@ 2.25
Rice.....	Philadelphia.....	2.36	2.50	2.50	2.00@ 2.50
Barley.....	New York.....	2.47	1.15@ 1.50	1.50	1.00@ 1.40
Barley.....	Philadelphia.....	2.36	1.50	1.50	1.25@ 1.50
Birdseye.....	New York.....	2.47		2.50	

* Prices and freight rates net tons; quotations f.o.b. cars, Chicago. † Advances over previous week shown in heavy type, declines in italics.



having dock affiliations, and in this way the movement is centered on certain Head-of-the-Lake docks, which are rapidly being filled. Actual purchasing of Lake cargo coal is as slow as on other markets and unless a buying movement off the docks is started before long cargo shipments must be curtailed.



According to the Geological Survey, stocks of bituminous coal held on April 1, 1921, by 1,137 dealers were sufficient for three weeks and five days' supply at the average rate of delivery to consumers during the first three months of the year. The report covers only a selected list of dealers handling less than 35 per cent of the coal distributed in this manner. On Jan. 1, 1921, these stocks were sufficient for four weeks and two days' supply. In comparison with 1919 or 1920, however, the stocks on April 1 of the present year appeared large. The 1,137 dealers had more than twice as much coal as on June 1, 1920, and about 12 per cent more than on April 1, 1919. Comparison with 1919 is particularly instructive because stocks were then admittedly large on account of the carry-over from the war period. The increase over 1919 was greatest in New England, the Middle Atlantic States, the Appalachian region and the South Atlantic Coastal Plain.

ANTHRACITE

Hard-coal production increased during the week ended May 28. According to the Geological Survey, the output was 1,988,000 net tons, which is 194,000 tons more than for the week preceding or an increase of 10.8 per cent.

Trading continues brisk in the domestic sizes at increased schedules announced June 1 by the companies and with additional premiums being charged by independent operators. Retail buying is confined to orders for current shipment

only and yard stocks are becoming heavy. Middle West retailers are now curtailing mine shipments, as trade in their territory is decreasing. Baltimore buying is being delayed by the Linthicum investigation, although retail prices for June have so far failed to reflect the advances at the mines. Steam sizes are everywhere becoming a drug on the market and much of this coal is going to storage by the companies. Independent producers are actively soliciting steam business at prices under the company schedules in order to maintain their good rate of domestic production.

COKE

Beehive coke production during the week ended May 28 was the smallest in any week for many years. According to the Geological Survey, the total output was 67,000 net tons, a decrease of 4,000 tons when compared with the week ended May 21. The decline centered in the Connellsville region, the cause being the closing down of all ovens of the largest producer in that section. The coke market is as quiet as ever—Connellsville furnace remains quotable \$3.25@3.50 and foundry has softened, \$4.75@5.25.

Receipts of Coal in New England by Coal Years, in Net Tons

(Compiled by the Massachusetts Fuel Administration)

Year ended April 1	ANTHRACITE AND BITUMINOUS			Percentage by Tide and Rail	
	Tide and Rail	Tide	Rail		
1916-17	33,763,000	18,670,000	15,093,000	55	45
1917-18	35,405,000	16,404,000	19,001,000	46	54
1918-19	38,285,000	19,066,000	19,219,000	50	50
1919-20	29,898,000	12,591,000	17,307,000	42	58
1920-21	34,391,000	13,417,000	20,974,000	39	61

Year ended April 1	ANTHRACITE			Percentage by Tide and Rail	
	Tide and Rail	Tide	Rail		
1916-17	10,450,000	4,963,000	5,487,000	47	53
1917-18	12,029,000	4,151,000	7,878,000	35	65
1918-19	12,992,000	3,981,000	9,011,000	31	69
1919-20	10,809,000	3,499,000	7,310,000	32	68
1920-21	12,249,000	3,744,000	8,505,000	31	69

Year ended April 1	BITUMINOUS			Percentage by Tide and Rail	
	Tide and Rail	Tide	Rail		
1916-17	23,313,000	13,707,000	9,606,000	59	41
1917-18	23,376,000	12,253,000	11,123,000	52	48
1918-19	25,293,000	15,085,000	10,208,000	60	40
1919-20	19,089,000	9,092,000	9,997,000	48	52
1920-21	22,142,000	9,673,000	12,469,000	44	56

Estimates of Production

FROM THE WEEKLY REPORT OF THE GEOLOGICAL SURVEY

(NET TONS)

BITUMINOUS COAL

Total Bituminous, Including Coal Coked

	1921		1920	
	Week	Calendar Year to Date	Week	Calendar Year to Date (a)
May 14 (b).....	8,009,000	144,470,000	8,764,000	188,935,000
Daily average....	1,335,000	1,270,000	1,461,000	1,653,000
May 21 (b).....	7,990,000	152,460,000	9,246,000	198,181,000
Daily average....	1,332,000	1,273,000	1,541,000	1,647,000
May 28 (c).....	8,053,000	160,513,000	9,568,000	207,749,000
Daily average....	1,342,000	1,276,000	1,595,000	1,645,000

(a) Less 2 days' production during first week in January to equalize number of days covered for the last two years. (b) Revised from last report. (c) Subject to revision.

ANTHRACITE

	1921		1920	
	Week	Calendar Year to Date	Week	Calendar Year to Date (a)
May 14.....	1,938,000	33,791,000	1,774,000	31,879,000
May 21.....	1,794,000	35,585,000	1,847,000	33,726,000
May 28 (b).....	1,988,000	37,573,000	1,885,000	35,611,000

(a) Less 2 days' production during first week in January to equalize number of days covered for the last two years. (b) Subject to revision.

BEEHIVE COKE

Week Ended		1921		1920 (c)	
May 28	May 21	May 29	to Date	to Date	to Date
1921 (a)	1921 (b)	1920	3,127,000	8,942,000	
67,000	71,000	439,000			

(a) Subject to revision. (b) Revised from last report. (c) Less 2 days' production during New Year's week to equalize number of days covered for the last two years.

Foreign Market And Export News

Hampton Roads Clearances and C. I. F. Prices

The following vessels cleared from this port with coal cargoes from May 28 to June 3, inclusive:

Vittorie Veneto, Ital., for Dakar, 6,679 tons; Oneka, Br., for Falmouth, 7,000; St. Andrews, Br., for Santos, 4,935 tons; Derwent River, Br., for Montevideo, 6,021 tons; Euterpe, Br., for Las Palmas, 4,422 tons; Belvernon, Nor., for Antilla, 868 tons; Monginevrom, Ital., for Port Said, 6,914 tons; Ellewoutsldjk, Du., for Montevideo, 4,671 tons; Hagno, Du., for Argentina, 4,593 tons; Taransay, Br., for Gibraltar, 6,628 tons; King Edward, Br., for Buenos Aires, 5,779 tons; Volumnia, Br., for Civita Vecchia, 7,691 tons; Ioannis, Grk., for Italy, 4,567 tons; Bussum, Du., for St. Vincent, 4,106 tons; King Alfred, Br., for Queens-town, 6,801 tons; Sittang, Br., for Buenos Aires, 5,649 tons; William Taylor, Am. Schr., for Honolulu, 1,915 tons; Quillwark, Am., for United Kingdom, 7,500 tons; Ethan Allen, Am., for United Kingdom, 10,132 tons; Natia, Br., for Rio De Janeiro, 5,083 tons; Dunstan, Br., for Para, 1,766 tons; Somerset, Br., for Auckland, 2,673 tons; Vancouver Maru, Jap., for Falmouth, 7,313 tons; Gurth, Nor., for Callao, 1,970 tons; Afghanistan, Br., for Queenstown, 7,689 tons; Almelo, Du., for Rotterdam, 9,026 tons; Nilemede, Br., for Falmouth, 6,281 tons.

C. I. F. prices reported this week are: United Kingdom, including all British ports for orders, \$12.40@13; Italy, \$12.90; Brazil, \$12.40; River Platte, \$11.90; Rotterdam and Antwerp, \$12.15; French Atlantic ports, \$5.75; Scandinavian ports, \$13.40; Havana, \$9.40, and Gibraltar, \$11.90.

THE ITALIAN STATE RAILWAYS ADMINISTRATION has reduced the prices for industrial coal as follows: German bunker, gas and furnace coal from Westphalian pits, from 285 to 275 lire; the same kinds of Silesian coal from 270 to 260 lire. Westphalian coke from 490 to 450 lire per ton and Silesian coke from 450 to 410 lire. At the same time Belgian bunker coal and briquets have decreased in price from 270 to 260 lire.

SWEDISH COAL FIRMS state that the demand for coal has not increased in spite of the British strike, as Sweden possesses considerable stocks of coal.

MANY BRITISH CONCERNS did not re-open after the Whitsuntide holidays, even though coal supplies were not fully exhausted. American coal which has just arrived in Ireland is not appreciated, it is reported, because the quality is unsatisfactory and few buying orders have been received. It is stated that American supplies are being sent speculatively, and uncertainty of continuous supplies is also detrimental to that trade.

FOR MORE THAN A MONTH no coal has been shipped from Norfolk to the Panama Canal, occasioned, it is said, by the increasing use of fuel oil on ships and by the fact that fewer vessels than usual have passed through the canal during recent months.

BRITISH EXPORT COAL PRICES for April, excluding bunkers, averaged £2 3s. 2d., according to the *Iron & Coal Trades Review*, as compared with the April, 1920, average of £3 18s. 6d.

Destination of British Coal Exports, April, 1913, 1920 and 1921

Country	Quantity (Tons)		
	1913	1920	1921
Russia.....	347,247	2,379	
Sweden.....	435,533	76,034	19,223
Norway.....	186,251	54,711	16,471
Denmark.....	270,312	79,818	48,000
Germany.....	804,747		8,700
Netherlands.....	156,411		39,096
Belgium.....	177,612	89,810	5,823
France.....	1,124,623	953,809	119,285
Portugal.....	102,930	13,200	12,539
Azores and Madeira.....	14,168	27,649	
Spain.....	189,688	8,088	31,268
Canary Islands.....	105,379	43,194	36
Italy.....	793,528	232,073	98,165
Austria-Hungary.....	65,413	1,639	
Greece.....	67,490		9,200
Algeria.....	107,471	63,502	15,602
French West Africa.....	15,671	27,087	
Port. W. Africa.....	33,719	31,173	8,747
Chile.....	68,615		353
Brazil.....	234,089	31,499	9,818
Uruguay.....	71,901	5,536	11,766
Argentina.....	338,859	8,314	31,375
Channel Islands.....	16,066	3,298	1,748
Gibraltar.....	35,021	123,558	7,918
Malta.....	66,064	14,780	11,582
Egypt.....	352,066	63,374	40,452
Anglo-Egypt. Sudan.....			
Aden and Depend.....	9,461	5,761	
British India.....	12,146		10,545
Ceylon.....	11,259		3,883
Other countries.....	137,129	35,609	44,953

Amount and Value of British Coal Exports, April and First Four Months of 1913, 1920 and 1921

	Quantity (Tons)			Value		
	1913	1920	1921	1913	1920	1921
Anthracite.....	235,650	114,202	28,005	£184,054	£346,066	£61,791
Steam.....	4,708,475	1,652,165	443,749	3,391,380	6,620,736	967,278
Gas.....	983,697	120,325	91,037	600,507	509,390	201,313
Household.....	146,273	1,403	3,397	96,401	2,175	7,460
Other sorts.....	276,774	107,800	40,360	170,204	359,715	71,975
Total.....	6,350,869	1,995,895	606,548	£4,442,546	£7,838,082	£1,309,817
	Four Months Ended April			Four Months Ended April		
	1913	1920	1921	1913	1920	1921
Anthracite.....	937,166	591,369	337,009	£746,307	£1,737,971	£1,043,188
Steam.....	17,317,543	8,559,480	4,454,270	12,143,900	32,272,534	11,313,026
Gas.....	3,593,943	755,593	941,805	2,133,761	2,818,074	2,439,114
Household.....	381,727	26,320	31,470	373,894	62,537	7,112
Other sorts.....	1,159,499	428,902	239,326	714,634	1,433,037	519,114
Total.....	23,589,878	10,361,664	6,003,880	£16,112,496	£38,324,153	£15,388,022

Coal and Coke Exports from the United States During April

Exports of coal and coke from the United States by countries during April, 1921, as reported by the Bureau of Foreign and Domestic Commerce, were as follows, in gross tons:

Countries	Coal		
	Anthracite Tons	Bituminous Tons	Coke Tons
Austria.....		11,400	
Azores and Madeira Is.		8,234	
Bulgaria.....		20,042	
Denmark.....		5,571	
Finland.....		821	
France.....		30,513	
Gibraltar.....		12,500	
Greece.....	87		
Italy.....		170,364	
Portugal.....		11,683	
Russia in Europe.....		10,120	
Spain.....		8,405	
Sweden.....		3,470	
England.....		6,052	3
Ireland.....		5,507	
Bermuda.....		5,191	
British Honduras.....		30	
Canada.....	352,069	704,587	14,857
Costa Rica.....			2
Guatemala.....	50	93	
Honduras.....		1,279	9
Nicaragua.....		290	
Panama.....		19,829	
Mexico.....	6,065	8,289	3,741
Newfoundland and Lab- rador.....	2,862	807	
Jamaica.....		10,411	
Other British West Indies	174	20	
Cuba.....	6,810	28,346	238
Virgin Islands of U. S.		7,836	
Dutch West Indies.....		310	
French West Indies.....		7,667	
Haiti.....		2	
Dominican Republic.....	387	559	3
Argentina.....		61,175	
Brazil.....		90,999	
Chile.....		5,413	
Colombia.....		2,624	88
Dutch Guiana.....	30	658	
Peru.....		106	
Venezuela.....		3	2
New Zealand.....		2,008	
Philippine Islands.....		8,535	
Canary Islands.....		58,508	
French Africa.....		37,212	
Portuguese Africa.....		27,824	
Egypt.....		57,734	
Totals.....	368,534	1,453,027	18,863

EXPORTS BY CUSTOMS DISTRICTS

	Coal		
	Anthracite Tons	Bituminous Tons	Coke Tons
Maine & N. H.		37	
Vermont.....	1,761	467	
Massachusetts.....	100	3,090	
St. Lawrence.....	106,749	106,619	1,604
Rochester.....	30,751	38,210	157
Buffalo.....	194,494	213,907	6,502
New York.....	9,975	5,258	117
Philadelphia.....	7,066	50,341	935
Maryland.....	149	58,895	
Virginia.....		580,967	238
South Carolina.....		12,173	
Florida.....		8,631	1,097
Mobile.....		45	
New Orleans.....		2,013	24
Sabine.....	22		25
Galveston.....		10	10
San Antonio.....	5,907	86	1,365
El Paso.....	40	3,371	185
San Diego.....		26	
Arizona.....	44	4,382	
San Francisco.....	2		10
Washington.....		280	
Dakota.....		7,127	107
Duluth and Superior.....		3,802	66
Michigan.....	5	108,840	6,293
Ohio.....	11,469	244,450	128
Totals.....	368,534	1,453,027	18,863

BUNKER COAL SUPPLIED TO STEAMERS IN FOREIGN TRADE

Customs districts:	Tons
New York.....	290,904
Philadelphia.....	33,840
Maryland.....	44,852
Virginia.....	259,856

RUMANIAN REPORTS INDICATE that in spite of special efforts to increase the coal production of the Transylvanian mines, only about 250,000 carloads, of 10,000 kilos each, are being mined per day, which barely suffices for the Rumanian State railroads.

Reports From the Market Centers

New England

BOSTON

Market Very Dull—Off-Short Trade the Mainstay of Certain Operations—Signs of Slack Trade in Anthracite.

Bituminous—Demand is extremely light and the dull market of a week ago continues unabated. Buyers who were on the point of considering purchases at current prices with a view to increasing their present stocks have postponed action in the belief they will buy quite as favorably a month or two later. General business is still dragging heavily and only in a very few special lines is there any real confidence in conditions in the next few months. We are entering upon the vacation season, and it can hardly be expected there will be any special reaction until fall or the foreign situation is more nearly in the way of being cleared up.

A few shippers have made strenuous efforts to place coal in the spot market, but the great majority have demonstrated to their satisfaction that in a broad way price is no inducement. Output from most operations is therefore being held at about the figures established in April when it was found steam-users had so much fuel in reserve that they would not be interested in contract quotations.

A few operations in central Pennsylvania are working practically five and six days per week, but it is noticed that almost every one of these is directly or indirectly the beneficiary of coal sold off-shore several months ago while there was still an active market in that direction. Bunker trade also is doing its share to keep certain wheels turning, for those mines which are dependent either upon all-rail territory or coastwise shipments find they are but slender reeds this season.

There are no reports of contracts being closed in this territory. It is realized by the trade there is no common meeting point as to prices for deferred delivery, and both buyer and seller are disposed to await the further trend of spot figures.

For Pocahontas and New River the market is again rather quiet. An increased tonnage has been moving both to Europe and South America, but the demand is one of the seeking kind on the part of well-organized sellers, rather than the result of any broad inquiry. Coastwise loadings have been quite scattering, a number of sailing schooners have been chartered to move staple tonnage while steamers were rendered undependable partly because of striking marine workers and partly because of greater expense of operation.

Anthracite—While deliveries of domestic sizes are being made in fair volume there are several signs of somewhat less demand for prompt coal. Dealers are in general distributing less than they anticipated and are not making room to the extent that was forecast. Then, too, buyers are particular about the assortment of sizes.

The army of small householders, or the largest percentage of them, feel that anthracite must share the downward trend of other commodities, and for several weeks there is certain to be only a light demand upon the average distributor.

Tidewater—East

NEW YORK

Producers Advance Anthracite Prices—Steam Sizes Drag the Market—Bituminous Buying Slow—Poorer Grades Scarce—Contract Coals Move Quickly.

Anthracite—In addition to the expected increase of 10c. per ton to the May price for domestic coals, made by the larger producers, the independents have made advances ranging as much as 50c. Retail dealers in Manhattan have increased their prices about 10c. to cover the higher figures of the large producers.

The market is in a somewhat chaotic condition. All producers are short of sufficient egg and stove to fill orders. Chestnut, the next size in demand, is becoming easier. Producers have had no trouble to dispose of their supply of this size so far but conditions do not look rosy for the balance of the summer. Demand in this immediate market is easier but the line trade continues to take large tonnages.

Pea is not being moved easily. Most shippers are loaded with this size and because of the urgency used in April and May to dispose of it are finding it hard at this time to keep their surplus stock down.

No official announcement has come from the anthracite operators as to whether they intend to absorb the Pennsylvania State Tax on coal which becomes effective July 1 but it is supposed that this tax will be passed on to the consumer.

According to a statement printed in a daily newspaper, the vice president of one of the big mining companies has stated that this would be passed on to the consumer and that it would amount to 35 or 40c. per ton.

Nothing but a revival in business can save the situation regarding the steam coals. These sizes have for several weeks been causing trouble. All pro-

ducers are stocking wherever available spots can be found while the coal that is finding its way to this Tidewater is being offered at considerable concessions.

Loaded boats of the smaller coals are causing some worry, and it necessitates heavy concessions in many instances to move them. Some shippers are unable to get more than \$3 f.o.b. mine for their buckwheat but the general range goes to about \$3.25.

Bituminous—Activity is limited to good movement of the better grades under contract. The spot market is quiet and no considerable improvement is expected until early fall. Not much more than about 50 per cent of the industrial plants of the country are believed to be in the market. A report heard last week was to the effect that as a result of a survey of about 3,000 plants only 38 per cent had signed contracts, 51 per cent were buying spot coal and the balance were not buying because of a heavy supply on hand.

The accumulation of coal at times has caused a temporary slump in prices but a quick recovery usually followed with the result that the general average for the week shows little change from the previous week.

Many inquiries regarding contracts are being received and some prospective buyers have asked for sample shipments. Operators are not inclined to shade their offers to any large extent, present quotations ranging from \$2.90 for Pool 11 to \$3.75 for Pool 9. In this harbor quotations ranged about as follows: Pool 9, \$5.90@\$6.10; Pool 10, \$5.65@\$5.80. Coal loaded in boats was plentiful. During the week these quotations alongside, gross tons, ranged about as follows: Pool 9, \$6.25@\$6.50 and Pool 10 \$5.90@\$6. Spot mine quotations are shown in the Weekly Review.

PHILADELPHIA

Company Anthracite Prices Advanced—Retailers Consider Increase—Consumer Demand Slackens—Steam Sizes Unimproved—Bituminous Is Quiet—Prices Firm.

Anthracite—The companies as usual were slow to announce June increases of 10c. a ton on all sizes, including pea. This with the heavy increases made by the independents, as announced last week, has made dealers seriously consider increasing their prices. While those dealers receiving a large proportion of independent coal actually did add considerable to their quotations, the advance has not been general.

At this time the old retail schedule of \$13.75 for egg, \$14 for stove and nut, and \$11 for pea, prevails. However, it seems likely that there soon will be a general retail advance. The new mine prices have had the effect of causing the chronic price cutters to increase their figures 25c.@50c. and their delivered prices now run \$13.25@\$13.50 for egg, \$13.50@\$13.75 for stove and nut, and \$10.25@\$10.50 for pea.

Consumer demand is still easing off and the indications are that this condi-

tion will grow. Dealers are receiving very few new orders. There is a persistent belief among a certain class of consumers that coal will be reduced \$2 or \$3 and when they learn that an increase is certain the dealers find themselves subjected to much criticism.

Stove size remains scarce and some dealers, in order to meet obligations on it, are taking pea from the independents in order to get stove. Pea is fast growing draggy and all yards are beginning to show heavy stocks. In the face of the promise of an early freight reduction some dealers are dubious about laying in capacity stocks, but so far they are taking all sizes that come.

Steam sizes are in little demand and the independents are making the strongest kind of efforts to move production. Anyone after a block of this coal can easily get a figure below company price.

Bituminous—The trade displays little if any activity. Buying continues very light, although the aggregate purchases are probably a trifle heavier. The consumer shows much interest in current prices, although just as some improvement was beginning to be shown in buying the President's active interest in the freight rate situation momentarily checked it, as the belief in a quick reduction in rates undoubtedly caused buyers to withhold orders.

It is not thought there will be much contract activity until freight rates are adjusted. In this connection it should be recalled that the really big consumers have closed for a portion of their requirements, but this is much less than usual, and a large share of their purchases are at spot prices.

The spot market is unchanged, although one hears of fluctuations from quotations that have been almost uniform for the past two months. We even hear of some buyers who have made offers to the producers at prices below current quotations, which have been accepted.

BALTIMORE

Poor Demand for All Classes of Coal—Prices Spotty and Weak—Constant Legislation and Investigation an Element Preventing Better Conditions—Anthracite Retail Rates Hold for June.

Bituminous—The market is the weakest and most spotty in character for weeks past. All classes of steam coals are offering at low prices. The best grades of steam can be had in the spot market at \$2.90@\$3 per net ton. Contract prices even over the year are only 15 to 25c. above the spot market. Low grades of steam coal can be had for as little as \$1.75@\$1.90, although fair grades are calling for \$2.15@\$2.50.

Constant legislative moves and investigations are undoubtedly leading the consumer to believe that still lower prices will exist later and this will have a continued effect of holding down a purchasing line already heavily hit by generally poor business conditions. Gas coals are also in the line of depression. The very best grades of Penn-

sylvania lump are at this time offering as low as \$2.85.

The export movement remains the only strong feature of the trade, the final reports of export loading at Baltimore for May showing a total of 214,462 tons cargo and 30,349 tons bunker. While official figures are not available as yet, the month of June has started off in healthy fashion.

Anthracite—Contrary to general expectation, hard coal merchants have decided not to raise retail prices during June. The wholesale increases announced for June of about 10c. on company coal to 20 and 30c. increases on independent coal were sufficient to have warranted a retail increase here, if the gross margin of profit as allowed by the Government during the war is to be maintained. The fact, however, that there is little buying in June and that the wholesale rate after July 1, is still very much in doubt, largely because of the new Pennsylvania state tax of 15c. a ton to go on hard coal after July 1, led to the decision not to make any advance at this time.

There is also in progress in Baltimore, on complaint of Congressman Linthicum of Maryland to the State's Attorney, that an unlawful combination exists for price regulation at retail, an inquiry which may or may not lead to action of some sort before July 1.

The retailers are understood to believe that after July 1, they will be in a better position to take up a just retail rate based on the then existing wholesale price, freight rate, etc. Meanwhile little buying of hard coal is going on in Baltimore either at retail or wholesale.

BUFFALO

Still Lower Bituminous Prices—Demand Fails to Improve—Anthracite Lake Loading Is Brisk.

Bituminous—Shippers are finding a new reason for consumers holding off. Rail wages are to go down, so freights must follow and then lower cost of mining coal. Of course the consumers, as is always the case when they control the situation, will claim all the advantage afforded by the other reductions and they will get most of it. As to the reduction of rail freights the roads will not only do all they can to hold freights up, but there are many complications to be adjusted prior to any change in rates.

Meanwhile orders do not increase. The average shipper is taking to golf more than ever, if only by way of finding something to do. The best that can be said of the situation is that if one holds his own in the trade he is doing well. Consumers drop off for a few cents a ton, choosing the lowest price regardless of previous relations.

Prices are hardly as high as they were, being \$3.25 for Youghiogheny gas lump, \$2.85 for Pittsburgh and No. 8 lump, \$2.40 for Allegheny Valley mine run and \$2 for slack, adding \$2.36 to Allegheny Valley and \$2.51 to other coals to cover freight.

Anthracite—May sales are generally reported good. At the same time the independent mines that are idle will remain so for the present, unless they can get a premium over the regular prices. This state of things ought to be a pretty fair answer to the charge that this coal is selling at an enormous profit.

Buffalo has bought more anthracite so far than it used to. Nobody really expects any difficulty now, but to make sure it seems best to lay in coal, no matter if lower prices in the fall are being agitated. Loadings into Lake steamers for the season to June 1 were 835,685 net tons, as against 461,121 tons to the same date last season. Last week 54,100 tons cleared for Duluth and Superior, 19,500 tons for Milwaukee, 14,400 tons for Chicago, 7,500 tons for Escanaba, 5,300 tons for Manitowoc, 5,000 tons for Two Rivers, 2,800 tons for Green Bay. Freight rates are 65@70c. to Chicago, 60c. to Milwaukee, Manitowoc, Green Bay and Escanaba and 50c. to Duluth.

Coke—The trade drags with most furnaces idle and consequently only a small part of the coke ovens running. The market is \$4.75 for 72-hour foundry, \$3.75 for furnace, \$3.25 for stock and \$5 for domestic sizes, mostly chestnut, to which add \$3.64 freight.

HAMPTON ROADS

Export Demand Declines Rapidly—Prices Weaken—Pier Accumulations Heavier.

The trade has suffered a slump since the beginning of the last week in May, after establishing a new high record for dumpings for the year. A total of 1,830,000 tons passed over the piers during last month, with the price holding steady at \$6.50@\$6.75 for Pools 1 and 2 and \$5.50@\$6 for other pools until the last week in the month, when prices also slumped.

Price of Pools 1 and 2 now quoted is \$6.25, while Pools 5, 6 and 7 have dropped to \$5.35@\$5.50. Extreme dullness has settled over the coal trade here. Approximately 60,000 tons were dumped the first day of June, which is far below the average for the preceding month.

Dealers believe that British coal users over-estimated their needs when the British strike came, and that they bought more coal than was required during the first rush of buying. As a consequence, the demand from that quarter has dropped off.

A comparison of the situation at the coal piers is as follows:

	Week ended May 26	Week ended June 2
Virginia Ry. piers, Sewalls Point—		
Cars on hand....	1,527	1,417
Tons on hand....	76,350	62,850
Tonnage waiting.....		27,100
C. & O. piers, Newport News—		
Cars on hand....	1,854	2,200
Tons on hand....	92,360	109,660
Tonnage waiting.....	23,200	35,250
N. & W. piers, Lamberts Point—		
Cars on hand....	1,555	2,053
Tons on hand....	74,436	97,217
Tonnage waiting.....	23,985	17,550

Northwest

MILWAUKEE

Heavy Receipts—Outward Movement Is Slow—Anthracite Advances.

Aside from the fact that anthracite was put up the customary 10c. per ton on June 1 there is little to chronicle in connection with the coal trade here. Demand continues slow. Now that anthracite has been lifted a notch, it may dawn on many that it is idle to think of a decline in the price of coal.

Receipts by Lake continue heavy, and there is a fair inward movement of Western coal by rail. Anthracite runs largely to stove size, and many dealers are unable to fill orders for chestnut. This condition will soon be remedied, however. There is a liberal supply of Pocahontas and other domestic grades of soft coal and also of coke. Prices hold steady.

Since the first steamer of the season arrived, thirty cargoes of anthracite and seventy-three of soft coal have been unloaded, the total receipts up to June 1 being as follows:

Month	Hard	Soft
April	43,100	154,583
May	204,246	486,967
Total	247,346	641,550
Same period, 1920..	127,100	162,462

DULUTH

Heavy Bituminous Receipts Continue—Interior Market Quiet—Anthracite Tonage Small—Freight Rate Situation Is Puzzling.

High water mark for the season in the receipts of coal was recorded last week when fifty-five ships discharged cargoes here. Only five of the cargoes received, however, were anthracite and there are only six on the way, although thirty-one cargoes in all are enroute.

The market situation is getting worse and demand is lighter than at any time since the season opened. The iron range is not buying as many of the mines are closed. The iron ore situation is showing signs of improvement, which, if they materialize, will help the docks. Coal is piling high on all docks and unless an increase in outward movement is realized they soon will be filled to capacity. Anthracite business is in desperate straits. No buying is recorded and buyers seem to be waiting for further lowering in prices. The only hope for lower levels is in a reduction of freight rates, following the general reduction of railroad wages just announced. This is highly problematical and acting contrary to it is the threatened increase in freight rates from Duluth to points in the Northwest.

The State is investigating this increase and the Attorney-General has been asked by the state railroad and warehouse commission to give a ruling on the order. The new rates will mean an increase of from a few cents to \$1 a ton. The commission seeks to prevent the application of the new rate

from Duluth to Minneapolis and St. Paul through Wisconsin.

An advance of 10c. a ton in anthracite took effect June 1. Run of pile is \$6.50 for gas and \$6.25 for steam. Pocahontas lump is \$11 and mine run \$7.25.

MINNEAPOLIS

Demand Unimproved—Little Storage Buying—Lake Movement Active—Dock Congestion Seen—Freight Adjustments Confusing.

The first of June at hand and still no life or snap to the coal business of the Northwest. Predictions on every hand that there must be early delivery to this section or there will be a serious situation, and apparently not a consumer taking the prediction at anywhere near par. Hard coal advancing monthly and not enough selling to justify running expenses of retail offices. What is the answer? Are buyers of coal playing the game with enough discretion to win against the disturbing prophecy put up to them?

Buyers are taking a chance if they will not cooperate in the matter of getting a better distribution of coal through the season. The long credits and easy terms of twenty years ago have gone and are unlikely ever to return. Similarly, the assumption of the entire risk of providing fuel for the winter will no longer be taken alone by the different members of the coal trade.

On the other hand, there is no doubt that the trade has not made sufficient inducement to the coal buyers, to encourage early storing. Railroads are among those who are urging buyers to stock early and guard against trouble, but they do not seem to find their recommendations worthy of their own use. If they cannot see it to their own advantage to store coal against the winter needs after having tried it out before, it is not surprising that other users are similarly dubious of the value of this move. The big trouble with those urging it is that they refuse to take the other fellow's point of view. Unfortunately, the buyer feels that since he received no protection upon an advancing market, he should not extend protection to producers when the market is not advancing.

A turn has developed which seems likely to help the general situation even though it has not been through any cooperation of the buyers. There has been quite a rush forward of dock coal. The movement has been not far from 1,500,000 tons, up to June 1. Some of it is going forward to guard against a tie-up of vessels and possibly of railroads on July 1, when the expected reduced wage scales on the railroads may cause labor trouble. Some even predict that enough coal will be sent forward shortly to crowd the docks to a point where no more can be handled unless there is a good tonnage moved to the interior.

One thing which will handicap this is the adjustment of coal freight rates, effective July 6. Some of the expected reductions will be disappointments and

there will be some increases not anticipated, but business is being delayed waiting for the expected lower freights. An announcement on the subject without delay from those in authority ought to be forthcoming to clear the situation,

Inland West

ST. LOUIS

Unusually Quiet Market—Domestic Storage Coal Easing—Steam Business in Bad Shape—Prices Going Down.

The situation in St. Louis is a most peculiar one. The householder has practically stopped buying storage coal. This was caused by the Boehmer Coal Co. sending out letters to their trade making a price of \$6.50 on Carterville when the Coal Service Bureau were advertising for people to buy and the circular was \$7.50. This has caused two or three other dealers to cut prices, with the result that Carterville went down to \$6.25.

The public has stopped buying. They believe that coal is going lower. When Carterville went off, so did Mt. Olive and Standard, and there is nothing moving today. Standard lump is \$4.50 for apartments, etc. The lowest mine price on this grade is \$2.10 with a rate of \$1.35, which makes it \$3.45. The cost of delivering is \$1. There is no allowance made for overhead or anything else.

Steam is in bad shape, especially on screenings and nut. There is no place to put it and such as is moving can be bought at the purchaser's own figure.

CHICAGO

Market Conditions Are Distressing—Steam Trading Is Dead and Domestic Lagging—Price Cutting Grows.

Market conditions are no better off today than they were a week ago. However, during the past week the Chicago market has been visited by a large number of purchasing agents who are trying to get their bearings on the present situation. Some of the large companies with retail coal yards scattered all through the Middle West, and a number of the smaller railroads whose headquarters are outside of Chicago, had their purchasing agents circulate around among the trade in an endeavor to find out what was in the air. A spirit of pessimism is very manifest, but there are those who think conditions are going to improve slowly but surely from now on, and base their opinion upon the fact that large users of coal are now sitting up and taking more interest.

Market conditions are very aggravated. There is no market on steam, as it is a matter of searching out a man who buys for a plant which is in a position to burn coal, and then making a price to him that will move the tonnage. Retail dealers are swamped with coal, and it is not an exaggeration to

say that 75 per cent of the retail trade in Chicago have their bins so full that it would be impossible for them to absorb more.

It seems that most of the dealers stocked anthracite early and in turn supplied some of their regular customers, afterwards refilling their empty bins by ordering more coal from the mines. It now appears that everyone who was going to stock up has already done so, and, consequently, the demand on hard coal has dropped off. Sales agents for West Virginia smokeless indulged in a battle royal here during the past week, and when the smoke cleared away, it was found that the price of pocahontas and smokeless coals had dropped from \$3.50 to \$2.50 and \$2.75.

Some of the more adventurous spirits among our manufacturers are talking about resuming activities at their factories, but for the sake of facts, it must be admitted that the industrial situation today is just as unsatisfactory as it has been.

DETROIT

Distribution of Bituminous Is Still Dragging — Demand Eases with a Shortening of Industrial Activity.

Bituminous—With the coal year entering on its second quarter, sales are showing no improvement. The volume of business is even somewhat less than a few weeks ago. Various manufacturing establishments and industrial plants are not maintaining the degree of activity that was expected. With sales diminishing, automobile companies are cutting down production schedules somewhat, reducing their purchases of coal, steel and other commodities.

This means a further delay in distribution of next winter's fuel supply here. Jobbers believe a situation is being created that will make a troublesome shortage unavoidable later in the year.

Smokeless lump and egg is quoted at \$5.50, mine run, \$3.50, slack \$2@ \$2.25. Ohio lump is \$3@ \$3.25, mine run \$2@ \$2.15 and slack \$1.80@ \$1.90. West Virginia lump is \$3.35@ \$3.50, mine run \$2.40@ \$2.50, and slack \$2.

Anthracite—Buyers of domestic coals are not showing an active interest in stocking up for next winter's needs. Most of the retail yards are fairly well supplied. Retail prices are \$14.50@ \$14.75 for egg, and \$14.25@ \$14.50 for stove and chestnut.

CINCINNATI

Screenings Decline Further — Steam Market Weak All Around — Distress Coal Appears — Anthracite Retail Cut.

There seems to be no bottom to the prices on screenings, while prepared sizes are holding firm. The effort of the smokeless people to advance the prepared sizes to meet the reduction on screenings has not been as successful as had been hoped. Pocahontas lump, which was forced up to \$6 last week, was

high this week at \$5.75. Bituminous lump is selling \$3.50@ \$3.75 without a break.

This week both Kentucky and West Virginia mines have been offering nut and slack as low as \$1.10@ \$1.20, not alone for immediate shipment but for future orders. This is on a level with the wholesalers who have had coal in distress to call upon. The price concession, however, does not seem to move much more coal. It may be different when the \$1 a ton buyers enter the market.

Mine run has been hit by the drop in screenings. Some coal in distress could be bought at \$1.50 though most of the mines dropped to \$1.75@ \$2. Some West Virginia producers were still asking over the \$2-quotation but it took salesmanship to get rid of it.

Few changes were made in retail quotations for June: Bituminous lump, \$7@ \$7.50, mine run \$6.50@ \$7; smokeless mine run \$8.50@ \$9, lump and egg, \$9.50@ \$10. There was a drop of \$1 on anthracite egg, it now being quoted at \$15.

CLEVELAND

Retail Prices Increased—Movement to Lake Slows Down — Market Very Sluggish.

Bituminous—The secondary wave of industrial curtailment which has struck plants in this district has been reflected in a smaller demand for coal. Another principal consumer of coal in this district is the iron and steel industry. Operations here are at the lowest ebb, compared with capacity, perhaps ever witnessed. This means that little coal is being consumed at steel mill or blast furnaces. The feeling strongly prevails that the bottom is being scraped in the iron and steel industry and that while this may continue for much of the summer a gradual improvement may be expected to set in at the latest by early fall. This forecast if true indicates a continued dull summer in the coal trade in this district.

Some stimulation to the depressed market, however, is hoped for by operators from more lively buying by railroads. The rising curves of railroad earnings and traffic, and the declining operating expenses, which will be further greatly lowered by the wage cut, should put the roads in better financial position.

Anthracite and Pocahontas—In accordance with predictions, dealers have increased the prices of hard coal and pocahontas lump an average of 25c. Dealers say that higher mine prices for these grades necessitate the advance. The demand remains dull and dealers hope that the increase will cause consumers to revise ideas about lower prices to come and will stimulate buying.

Receipts of bituminous coal during the week ended May 28 were 1,043 cars; divided, industrial 711, retail 332; as compared with receipts of 1,153 cars the preceding week.

Lake—Because of the enormous congestion of coal at the Lower Lake docks due to the inability to get ships, the movement has been checked temporarily. Shippers are sending coal to the Northwest on their own account in anticipation of later demand. Unless the fuel is shipped into the interior more rapidly than has been the case, the movement to the Lake may slacken materially.

Prices at retail are: Anthracite, egg and grate, \$14; chestnut, \$14.15, stove, \$14.20; Pocahontas, shoveled lump, \$11.25, mine run, \$9.50; domestic bituminous—West Virginia splint, \$10; No. 8 Pittsburgh, \$8.15; cannel lump, \$12.15; steam coal—No. 6 and No. 8 slack, \$5.75; No. 6 and No. 8 mine run, \$6; No. 8 3-in., lump \$6.

COLUMBUS

Steam Sizes Are Showing Marked Weakness—Lake Trade Is Active—Domestic Market Slightly Better.

Quite a few of the larger operations are being worked full time on Lake tonnage and the result is a better output in practically all fields. Steam grades are still slow and there is little likelihood for an improvement within a short time.

Domestic trade is showing a little life although householders are not laying in their winter stocks very rapidly. Some who are far-sighted are placing orders for high-grade coals such as Pocahontas and other smokeless varieties. Retail stocks are fairly good and dealers are not inclined to increase them under present conditions.

Retail prices are fairly steady. Hocking re-screened grades are selling \$6.50 @ \$6.75, while ordinary lump is \$6.25 @ \$6.50. West Virginia splints are quoted \$7.50@ \$7.75, and Pocahontas is selling at \$9.50. Both egg and chestnut anthracite sells around \$14.50.

Outside of the demand from public utilities there is little steam coal moving. Railroads are not taking any large amounts. Resumption of manufacturing is still slow and there are still rather heavy reserves at many places. Lower prices in mine run and screenings have developed. Screenings are especially weak, due to the larger production of lump for Lake shipment.

Some congestion at the lower Lake ports is reported, owing to the scarcity of vessels. The H. V. Ry. has about 5,000 loaded cars on its tracks waiting dumping.

South

BIRMINGHAM

Slack Demand Causes Steam Prices to Soften—Domestic Scarce and Quotations Stable—Some Wage Reductions.

Surplus of steam grades thrown on the market in the past week, which could not be readily absorbed, caused a shading of prices of 25 or 50c. This surplus was not due to increased production but to a weaker spot demand,

which was caused in part by an invasion of Alabama territory by coal from the Kentucky and Illinois fields.

To meet this competition and in an effort to create a greater market for coal from this district some of the producing interests are reported to have made a wage adjustment through a mutual understanding with their employees. However, there has been no general wage reduction and most of the principal operators are maintaining the war-time schedules and selling prices based thereon.

The domestic market is quiet and demand easy, though sufficient to about take care of what coal is being produced. Dealers report the retail trade very dull and comparatively little coal is being taken on by householders. Prices for lump and nut sizes are unchanged.

Mines are operating on about the same schedules they have been for several weeks—from one to four days—averaging about two days at commercial operations.

LOUISVILLE

Prices Weaker as Retail Demand Is Slowing—Over-production of Screenings Resulting in Poor Steam Market.

As a result of hot weather and small stocking of prepared sizes demand is slumping in this section, although there is a good deal of prepared coal moving to the Lake and to the North and Northwest.

Production of prepared coal has resulted in an oversupply of screenings, in view of poor industrial consumption, this causing a draggy market on all steam grades.

Movement of lump to the Lake is forcing Hazard operators to sell screenings at very low prices for quick movement, and with the steam market as weak as it is there is a possibility of higher prices for prepared sizes.

Some of the low offers made by mines during the past few days were: West Virginia and Hazard No. 6 and 7 seam screenings, \$1; Harlan screenings, \$1.50; No. 4 Hazard screenings, \$1.25; Hazard mine run, \$2@2.40; Harlan mine run, \$2.40@2.65; West Virginia lump, \$3.50 for best grades; mine run, \$2.

West

DENVER

Production Low—Outlook Unfavorable—Storage Demand Lags Further.

Despite a very unfavorable outlook, operators are maintaining part-time production, waiting for the restoration of the regular mine price of \$6.50 for bituminous lump, Sept. 1. There is a possibility that the regular price will be asked by some companies Aug. 1, which marks the closing days of the summer storage season.

The declaration by railroad officials that freight rates would not be lowered late in the summer has had the tendency of bringing on a little spurt in business, but it has been so slight that the general situation is little improved over a month ago.

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Southwest

KANSAS CITY

Domestic Demand Picks Up—Steam Sizes Weaker—Prices Being Adjusted.

Dealers are liberally ordering domestic grades. Prices for Kansas lump and nut advanced 25c. last week and no doubt further increases will be made later on as the operators will be compelled to secure a better price for

domestic on account of having to sacrifice the fine coal.

The situation in Arkansas is about the same as in Kansas. Lump advanced 25c. and screenings declined 25c. Mines in operation are only running two to three days per week in Kansas and Arkansas.

In Missouri the running time is better. There have been no changes in prices but no doubt an advance will be made on domestic grades within a short time. Prices at present are as follows: Arkansas lump \$6.50, mine run \$4.50, slack \$2.50; Kansas lump and nut \$5.25, mine run \$4.25@4.50, mill \$3.50, slack \$3.25; Missouri lump \$4.50, mine run \$3.85, washed slack \$3.85, raw slack \$3.15.

News From the Coal Fields

Northern Appalachian

ANTHRACITE

Better Operations Follow Good Demand—Independent Prices Stronger.

Practically everything is working full time. Some of the washeries which have been shut down have resumed operations. The price is becoming a little firmer, permitting the independents to get a better operation.

One of the collieries of the Pennsylvania Coal Co. which has been closed for the past week due to a strike, will be shut down indefinitely to permit repairs to the machinery. This is the only large colliery in the field that is not operating.

CONNELLVILLE

Conditions Unchanged—Further Decrease in Furnace Oven Output.

There is nothing new in the coke situation in general. Furnaces are not blowing in or out, nearly all being out already, so that there is no change in the consumption of merchant coke. Steel works are making a trifle less pig iron, but this does not materially affect their operations in the Connellsville region as there had already been a remarkably heavy decrease. It should be noted that the steel interests who have beehive ovens in the Connellsville region and byproduct ovens at their furnace plants have been giving the preference to the latter right along. Their shipments of coal from the Connellsville region have thus kept up much better than their production of coke in the region.

Merchant operators have not changed their policies. Those with idle plants have no disposition to resume unless they can get a price above the current market, while those who are working are making every effort to stay in operation. Spot furnace coke remains \$3.25@3.50, with \$3.25 about as high

as furnaces will pay. Some furnaces believe that on an order for a month's run of a furnace \$3 could be done. The Robeson Iron Co. purchase of low phosphorus coke for four months' delivery noted last week as having been made at a reported price of \$3.75, was made at a trifle under this figure. Foundry coke is about 25c. lower, being quotable \$4.75@5.25.

The *Courier* reports production in the week ended May 28 at 14,500 tons for the furnace ovens and 23,480 tons by the merchant ovens, making a total of 37,980 tons, a decrease of 4,700 tons.

EASTERN OHIO

Production Continues Good—Lake Accumulation—Industrial Market Quiet—R.R. Buying Lags.

Production for the week ended May 28 approximated the maximum in weekly output for the current year established during the preceding week. Tonnage produced for year to date is estimated at 6,597,593 tons or about 50 per cent of capacity. Association mines averaged about 64 per cent of possible worktime and produced above 70 per cent rated capacity as a whole.

Railroads are taking less than 30 per cent of present output and their fuel requirements continue at a minimum. The Wheeling & Lake Erie had a car shortage of about 10 per cent during the week by reason of heavy Lake shipments under load.

Operators are marking time, awaiting anticipated favorable developments in the trade. One of these is increased demand from the railroads in this section and in the Northwest. It is felt that after adjustment of wage difficulties confronting the roads there will be more contract inquiries and negotiations.

Unless there is quicker dispatch in the clearance of Lake cargo coal from the lower docks, it is expected that shipments will have to be slowed up. The accumulation is growing daily and some

of the roads have record quantities of coal on track awaiting boats. However, with shippers holding off during last four days of May, at the request of the Ore & Coal Exchange, a temporary improvement is expected.

Aside from the large volume of shipments to Lake, the trade is quiet and industrial consumers continue to supply their needs in the spot market.

PITTSBURGH

Congestion at Lake Front Requires Permit System—Shipments Greatly Decreased—Gas Coal Easier.

On account of further increase in the congestion of loaded cars at the Lake it has become necessary to limit shipments, and a permit system has been established, under the jurisdiction of the Ore & Coal Exchange. Permits are issued only as a clear route for the coal can be shown, and naturally the volume of permits is small.

Mine operations have decreased by fully as much as the decrease entailed in Lake shipments, as the line demand has grown worse rather than better. Production which rose to about 60 per cent for a short time, is now back to 40 per cent or less. The river mines have had practically no operation since the end of April.

Coal consumption in the industries is extremely light, on account of the general depression, which has become more severe in the past week or two. Railroad consumption continues at the reduced rate of the past two or three months. Buying by public utilities is slightly decreased but is very well maintained compared with the experience in other lines.

The market for spot coal is not quotably changed, except that under pressure of increased competition gas coal is off about 10c. Prices are shown in the Weekly Review.

UNIONTOWN

Further Curtailment of Operations—Futile Inducements Made to Stimulate Buying.

While it has been felt for some weeks that the productive output of the coal and coke region could not reach a lower point, the week just ended has seen a further curtailment in operations of the few independent plants still running. As reported last week, the Frick company has put out all its 19,000 beehive ovens but the present week saw an increase to some extent in the output of byproduct coal, the region production of the Frick company being placed at 40 per cent capacity whereas last week it was 25 per cent.

Added to the continued efforts of producers to induce buying is the plan of one large operator to provide additional credit for coal bought until July 1. The extent of the additional credit was not made known. In various other ways many operators have been seeking to break the "buyers' strike" but in practically all cases have met with flat refusal.

Sales of either coal or coke are not

only very few but are mostly in small tonnages. Steam coal has a nominal quotation of \$1.75 with byproduct ranging \$2@ \$2.25. Furnace coke is quotable \$3.25@ \$3.75 with foundry \$4.75@ \$5.25.

CENTRAL PENNSYLVANIA

Miners Discuss Wage Questions June 12—May Tonnage Heavier Than for April.

A meeting of much importance has been called by the executive board of District No. 2, United Mine Workers, to meet in Clearfield on June 12. District President John Brophy announces that one of the things to be considered will be the request of J. S. Sommerville, president of the operators' association, that the wage agreement be reopened.

In answer to a request for a meeting on April 30, Mr. Brophy replied that such a meeting would be useless. However, since that time, a clean cut issue has developed. If the conference is refused, it puts the operators in the position of being refused the right to discuss the great problems confronting the industry. The action of the miners will be watched with much interest by the operators.

Increase in tonnage mined in the district in May over April will amount to approximately 10,000 cars. This increase is largely represented by the gains made by non-union operators who have reduced wages to the 1917 basis.

UPPER POTOMAC

Dullness More Pronounced—Best Coal Selling at Bargain Figures.

Dullness was very pronounced during the last few days of May and not more than one-third of the mines were in operation. A few of the larger producers were on a four-day basis but such cases were exceptional. Nearly all the mines between Cumberland and Thomas were closed down along the line of the Western Maryland. There was so little demand that the best coal was being sold around \$2.50.

FAIRMONT AND PANHANDLE

Fairmont Production Increases—Spot Market Unimproved—R.R. Fuel Loading Is Heavier.

FAIRMONT

Although there was not any material increase in demand during the week ended May 28 yet production increased, especially during the early part of that period. It was railroad fuel business alone in some sections which kept mines in operation. Spot quotations ranged \$2 @ \$2.50. Lake shipments, after the first few days, exceeded the tonnage consigned to Tidewater.

NORTHERN PANHANDLE

A comparatively small volume of coal was being consigned to Lake during the closing days of May. Slack continued difficult to move. Only a limited tonnage of railroad fuel was being mined and as far as general market conditions were concerned little change was noted.

Middle Western

MIDWEST REVIEW

Buying Ceases in Expectation of Lower Freight Rates—Active Campaign Fails to Stimulate Buying—Production Again Dropping.

Very recently a statement of President Harding's to the effect that railroad rates would have to be reduced and reduced quickly was given very wide publicity in the Middle West territory. The effect was felt instantaneously, and the public stopped buying in the expectation that rates would be down very much sooner than has been anticipated. It is predicted that during the next few weeks there will be no increase in the tonnage produced in the mining regions of the West.

The retail dealers and their associations are doing all they can to stimulate buying. A great many of the associations particularly, have gone to very considerable expense in preparing special advertising matter to be distributed by their members, giving "coal facts" to the public that would stimulate any reasonable person to purchase coal while he is able to get it. The Car Service Division of the American Railway Association believes we are headed right for a car shortage. The situation is serious; there is no question about it. The problem is how to present the case to the public in such a way that they will realize the precariousness of their position.

On June 1, there were but few changes in circular prices. Franklin County operators increased their prices on the larger sizes of domestic from \$3.85 to \$4.05 a ton. When this increase became known during the last week in May, it stimulated sales for the time being, but so far in June, the demand for domestic coals is extremely sluggish. Anthracite took its customary advance of 10c. a ton. All other grades remained stationary or weakened to some trifling extent. The smaller operators in Indiana and Illinois have set prices perhaps a little above their May circular, but those in the market are having no difficulty whatsoever in purchasing what coal they want at May prices or even less.

Smokeless coal, during the past few days, has shown decided signs of weakness, perhaps because so little smokeless is being loaded on the seaboard at this time. It is easy to purchase high grade smokeless mine run on the basis of \$2.50 at the mines. This price is very near a new low level.

During the past week, the railroad wage board notified the public that a reduction would take place on July 1 and that it would amount to perhaps 12 per cent straight through. Labor has shown but few signs of restlessness in the face of this proposed reduction, and those who are in a position to know what they are talking about so far as

railroad labor conditions are concerned in the Middle West, claim that there will be no strike and that the men themselves realize that they are taking their part in the general reduction that everybody else has had to assume.

SOUTHERN ILLINOIS

Steam Sizes Impossible to Move — Domestic Demand Falling — Much Dissatisfaction Over Working Conditions — Prices Slump.

It is estimated there must be at least 300,000 or 400,000 tons of steam coal piled up at various mines in southern Illinois by operators who have to ship domestic and have no place to put steam sizes. At two or three points in the Franklin County field these piles have been causing some trouble on account of spontaneous combustion. The demand for domestic sizes continues to ease up, especially on nut and egg.

Considerable dissatisfaction exists among the miners on account of working time. Several mines have not resumed operations. Some are working one day a week and some are getting as many as four days. Railroad tonnage is not moving out in the volume that it should.

In the Duquoin district somewhat similar conditions exist as in the Cartersville field. Working time averages two days a week. Several mines are still shut down and steam sizes are hardest to move, with a slowing up in the demand for domestic.

The Mt. Olive district is running one and two days a week at such mines as are working. Steam sizes are the cause of most of the trouble. Such steam as is being sold on the open market is going north to Chicago and in the territory south on contracts to St. Louis. Domestic coal going to the country is moving fairly good. St. Louis shipments are off.

The Standard district shows one of the most demoralized conditions that have existed in years. Some mines work one day in a week and others manage to get in three or four days, those working on railroad tonnage. There is no demand for steam at all and lump and egg are hard to move.

Nothing indicates that the situation will improve at any time between now and July 1. Much dissatisfaction is noted among miners who are about ready to give up. Their money has been spent, their credit exhausted and they have no work.

INDIANA

Production at Low Ebb—No Spot Demand—Reserves Being Consumed.

Production continues at a very low ebb, with a noticeable disposition on the part of buyers to hold aloof in the matter of renewing contracts. The difference between contract and spot prices is regarded as too expensive a form of insurance for the consumer to buy for his protection of this year's supply of coal.

Coal stocks, however, are very low at the various industrial plants and

most of them are drawing further on their reserves before making purchases. Some industrials are being compelled to go into the market, but on the whole there has been little change in demand. Dealers say consumers are buying even lighter than is usual for this season of the year. Prices both at the mine and at retail are about the same as last week.

WESTERN KENTUCKY

All Demands Are Quiet—General Movement Light—Operators Protest Freight Rate Increase.

During the past week prices have been fairly well maintained but business as a whole is quiet, and prospects are not especially encouraging for any early resumption in demand, or for any good prices for steam sizes in view of the fact that general industrial demand is slow, and is being well supplied with low offers of screenings.

The western Kentucky operators on June 1 filed protest with the Interstate Commerce Commission against proposed increase in freight rates on June 16 of 15c. a ton to Louisville and 21c. to Cincinnati, which would raise the rate to Louisville from \$1.25 to \$1.40 and to Cincinnati from \$1.94 to \$2.15. It is held that such increases in steam sizes would work a disadvantage to the operators, especially in connection with river fuel from West Virginia.

Middle Appalachian

HIGH-VOLATILE FIELDS

Demand Is Weaker — Production for Lake Causes Oversupply of Screenings — Prices Go Even Lower.

KANAWHA

With a turn for the worse during the week ended May 28, production was at a very low ebb. The slight betterment in demand proved to be only temporary and by the end of the month conditions were worse than ever. Little coal was moving to Tidewater and even a smaller volume to the Lake. As a result of such a poor market, prices were averaging less than earlier in the month.

LOGAN AND THACKER

Heavy Logan shipments were being made in spite of the fact that there was comparatively little market. Much tonnage was being moved to the Lake but the majority of this was going for storage purposes.

"No market" losses were being reduced in the Williamson field, the weekly output hovering around 90,000 tons. Labor conditions were comparatively quiet and it was possible for mines to be operated on a fairly satisfactory basis.

NORTHEASTERN KENTUCKY

The Lake outlet made it possible for more mines to operate during the week but this resulted in a continued oversupply of screenings which were almost

impossible to market. Very little coal was being sold to industrial concerns, either on a spot or contract basis.

VIRGINIA

Spot demand was in a state of almost complete stagnation and not enough new contracts were being received to stimulate production, which amounted to only 50 per cent of capacity. Production in the Clinch District was not more than 20,000 tons; in the entire southwestern territory it did not exceed 85,000 tons.

LOW-VOLATILE FIELDS

Slightly Heavier Demand — Slack Weaker with Oversupply — Contract Shipments Are Gaining.

NEW RIVER AND THE GULF

If anything, a slight increase in production was noted in the New River field toward the close of the week ended May 28. There was no perceptible improvement in Tidewater demand although there was a better call for prepared sizes in the Northwestern markets. As a result, slack was being overproduced and sold at softening prices.

Winding Gulf production improved with a better demand both at Tidewater and Inland, although prices were unchanged. Production as a whole was approximately 60 per cent of potential capacity.

POCAHONTAS AND TUG RIVER

Demand for Pocahontas was fairly well sustained, production continuing above the 300,000-ton mark. The bulk of the output was going to Tidewater for bunkering although there was a growing demand in Western markets. Contract shipments were growing in volume. With a heavier production of Lake coal, resultant slack was becoming hard to move.

Tug River production was gaining with the output in excess of 100,000 tons, better than at any time since January. Contract shipments were heavy and spot demand was somewhat improved.

West

UTAH

Public Refuses to Store Coal at Present Prices—Market Is Extremely Dull.

The coal business here is as quiet as ever. Producers and dealers are determined to maintain the present scale until the cost of production and transportation changes. There does not seem to be any hope of business picking up before the early part of September, when consumers will realize they must buy their winter's coal in order to protect themselves.

Consumers are criticising the coal men for keeping their commodity at war prices, and efforts to stimulate business are taken in some cases as an effort to maintain these prices at all cost.



MINE And COMPANY NEWS



ALABAMA

The contract for the construction of the sub-structure and buildings for the housing of machinery and equipment at the new **Federal coal terminals at Mobile** has been awarded to **Hampton Reynolds**, New Orleans contractor, on his bid of \$100,000. This work is to be completed within 150 days from the receipt of formal notice to the successful bidder. **Maj. Earl North**, U. S. Engineer, in charge of the construction of the coal terminals, which will cost \$400,000, expects to advertise for bids on the coal-handling machinery and equipment in the course of a few days.

A first Aid Field Meet will be held Aug. 6 under the auspices and direction of the **Alabama Safety Association**. The Board of Managers to arrange for the meet is composed of **G. W. Postell**, chairman, **J. M. McHugh**, **H. J. Thomas**, **F. G. Morris**, **F. R. Bell**, **A. R. Long**, **A. S. Tubb**, **M. H. Fies** and **James Nicol**.

ILLINOIS

The **By-Products Coke Corporation** has sold to a Chicago banking syndicate \$4,000,000 fifteen-year first and refunding 8 per cent bonds, due May 1, 1936. The bonds will be offered at 99.

The **Taylor Coal Co.**, of Herrin, has contracted for the complete installation of a new steel tippie and loading booms at Mine No. 5. The tippie will load on five tracks and will be equipped with balanced Marcus screen and loading booms on four tracks.

The **Ridge Coal Mining Co.**, Marion, has contracted with **Roberts and Schaefer Co.**, for the construction of a new tippie. The construction work will proceed without material interruption to the existing tippie.

INDIANA

Papers have been filed by the **N. S. Tighe Coal Co.**, Fort Wayne, with the secretary of state, showing a capitalization of \$25,000, for the purpose of buying and selling coal. Directors of the company are **Norman S. Tighe**, **Charles M. Niezer** and **John W. Eggeman**.

The **Ehrmann Coal Co.**, Terre Haute, has filed papers with the secretary of state, showing its dissolution.

A sister mine to two of the world's famous coal mines, known as the **American Mines Nos. 1 and 2**, located in the **Bicknell, Ind.**, field, will be sunk soon. The new mine will be known as the **American Mine No. 3**. The new mine is located in the heart of the richest coal fields of the country. The mines located in that district have not reached their sixth vein.

The **Crescent Coal Co.**, the **Sunnyside Coal & Coke Co.**, and the **Bosse Coal Co.**, of Evansville have announced a cut in the price of coal for June delivery. All these companies are quoting lump and nut coal at 20 cents a bushel in 100 pounds delivery and 19c. for mine run. The cut was made to encourage June buying.

KENTUCKY

The **Ford Coal Corporation**, Louisville, capital \$150,000, has been incorporated by **George H. Wrocklage**, **W. H. Fisher** and **J. Paul Swain**, each holding three shares.

Falling slate in the **Kermit Coal Co.'s** mines at **Kenmont**, near **Whitesburg**, resulted in the death of **South Blankenship**, who had been with the company three days.

One of the most voluminous petitions ever presented in the **Jefferson Circuit Court** has been filed by various stockholders of the **Wallins Creek Coal Co.**, against **Fred D. Wood**, trustee for the stockholders. Plaintiffs named in the petition are: **Tipton L. Young**, **A. B. Winkler**, **R. W. Johnson**, administrator of the estate of **C. J. Johnson**, and **L. A. Bowling**. The

prayer asks that a receiver be appointed to assume charge of the trust fund; that the defendant make an accounting as trustee; that defendant be removed as trustee; for a settlement of all outstanding liabilities of the trust estate.

A number of new companies are launching developments in the **Elkhorn and Hazard coal fields**. One is the **Miller-Haskins Coal Co.**, in the **Carr's Fork field**, and in the same territory are the **Suddy Coal Co.**, the **Yellow Creek Coal Co.**, the **Scuddy Coal Co.**, and others. Many new miners' homes will soon be under construction. In the vicinity of **Blackey**, rapid development work is being done by the **Elk Creek Coal Co.**

Fire breaking out in the forward part of a coal unloading or digger boat of the **E. T. Slider Co.**, at **Louisville**, destroyed the boat, the loss being about \$15,000.

The **Amburgy Coal Co.**, Louisville, one of the **K. U. Meguire** interests, is erecting a new tippie and screens at **Dalna**, office building, miners' homes, etc., and will soon be handling coal through this tippie from both the **Amburgy** and **Hazard No. 4** seams, located on two sides of the valley.

The **George Miller, Jr., Coal Co.**, retailers, is enlarging its **Louisville elevator**, adding new pockets, which will materially increase its handling capacity. The **James Coal Co.**, is completing additions to an elevator.

MINNESOTA

The **Inland Coal & Dock Co.** is constructing an extension of 500 ft. on its property. When the extension is completed storage capacity will be for 500,000 tons of bituminous coal and there will be some 1,500 ft. of property left to make further extensions if necessary in the future. The work is expected to be finished by July 25.

Articles of incorporation have been filed of the **Laird Coal Co.**, of Minneapolis, the incorporators being **Ormond E. Laird**, **Ruth Landers Laird** and **H. Lloyd Laird, Jr.** It is capitalized at \$50,000.

The **Northwestern Fuel Co.**, has added a new claim to its No. 4 Dock at **Duluth**. It will reduce cargo unloading time by its application in the clean-up.

MISSOURI

Coal-mining companies of **Marcelline**, **Lexington**, **Novinger**, **Richmond** and other cities of the state will send teams to **Bevin June 25** to compete in contests in first-aid work to miners.

NEW YORK

The **J. B. B. Coal Co.** announces a change of name to the **Dexear Pocahontas Coal Co.**, under which name the coal mined from its properties in **West Virginia** will be sold in the future.

OHIO

Papers have been filed with the secretary of state increasing the authorized capital of the **Bowling Coal Co.**, of **Dennison**, from \$30,000 to \$50,000.

Cincinnati Coal offices were apprised of the fact that the **Norfolk and Southern** let their fuel contract recently with a price of \$2.40 for 4-in. mine run and \$2.70 for straight mine run. The contract has twelve months to run and three companies were awarded the business.

Important changes have been announced by the **Hocking Valley Products Co.**, which operates large coal mines as well as a face brick plant in the **Hocking Valley**. **A. R. DeVinnish**, who has been sales manager of the coal department has been put in charge, looking after the operation and sales departments. The coal properties consist of about 1,300 acres of excellent coal lands much of which is developed.

Quite a few coal mining companies have been incorporated in Ohio recently. Among the number are the **Lomi Coal Co.**, of **Cadiz**, capital, \$500,000, **John A. Matters**, **A. H. Finnical**, **John Williams**, **Charles W. Wenner** and **T. J. Reese**. The **Sheridan Mining Co.**, **Ironton**, \$25,000 by **S. M. Porter**, **R. G. Elurie** and others. The **Harriott Coal Co.**, of **East Palistine**, capital, \$10,000 **C. C. Harriott**, **L. M. Kyes** and others.

OKLAHOMA

The **Crowe Coal Co.**, of **Henryetta** is preparing to resume early operation of its mines. Extensive improvements are being made and new units installed at a cost of more than \$100,000. Motor generating sets are being put in place for producing electricity, and attendant equipment to cost more than \$60,000 is being installed. The mines have been closed for some time while these improvements were being made, the owners taking advantage of the dull season for the shutdown.

PENNSYLVANIA

The **Westmoreland Coal Co.** of **Irwin** has contracted with **Roberts and Schaefer Co.** for the installation of a second **Marcus screen** at their tippie at **Harrison City**.

With a contribution of \$2,250 from the **Kingston Coal Co.**, in lieu of subscriptions by the men, one of \$2,250 from **Mrs. George S. Bennett**, and one of \$10,000 from the **Lehigh & Wilkes-Barre Coal Co.**, the total of the **Wilkes-Barre City Hospital drive** has reached \$229,929.

For the third successive year officials of the **Lehigh & Wilkes-Barre Coal Co.** have announced the beginning of a garden competition among families of miners living in houses owned by the company. The competition will include the arrangement of lawns, flower beds and vegetable gardens. Cash prizes will be awarded to the owners of the best kept properties next September.

TENNESSEE

Several thousand acres of coal and timber land will be developed by the **Tennessee Coal & Timber Co.**, a newly formed corporation in **Knoxville**. The company has been incorporated for \$1,000,000. **Samuel J. Singer** will be general manager.

John E. Patton, **James M. Adams** and **H. H. Gray** have chartered the **Sewanee Coal Co.** to mine coal in the **Swanee section**. They have placed the capital stock at \$1,000,000.

UTAH

The **Martin Coal Co.**, one of the largest retail companies in **Salt Lake City**, has received permission from the **State Utilities Commission** to sell 10,000 shares of its 7 per cent cumulative preferred stock at \$10 a share.

The **United States Fuel Co.** is encouraging its miners at **Hiawatha** to raise gardens. The company furnishes teams and men to plough the gardens.

VIRGINIA

The **Norfolk branch of the Old Dominion Coal Co.** has been discontinued, and the personnel of the local office have been transferred to the **Richmond branch**.

WASHINGTON

Pulverized Washington coal is to receive its first tryout as fuel for a steam vessel by the **Cary-Davis Tug & Barge Co.** of **Seattle** which has placed an order for the necessary installation in the tug **Chehalis**. Preliminary tests indicate that as compared with fuel oil, the pulverized product will cut the vessel's fuel bill in two.

WEST VIRGINIA

The Amherst Fuel Co., one of the George M. Jones companies in the Logan field has extended its operations and has opened up its new mine on Toney's Fork. The first shipments from this mine were made about the middle of May.

J. Lee Hornor and associates have organized a coal concern known as J. Lee Hornor, Inc., this company being capitalized at \$50,000. It will operate in Harrison County, the headquarters of the concern being Clarksburg. The following Clarksburg coal men are identified with the new concern: J. Lee Hornor, Howard L. Robinson, R. L. Hornor, L. C. Hornor and A. M. Hornor.

Organization of the R. M. Davis Coal Co., with a capitalization of \$100,000 presages further development of coal lands in Monongalia County where this company will operate the general offices of the company being at Morgantown. Active in effecting the organization were E. H. Gilbert, R. M. Davis, D. E. Castor, R. E. Guy and W. F. Mathews, all of Morgantown.

It has been found possible to operate on a 100 per cent basis at the Minden mines of the New River & Pocahontas Consolidated Coal Co., but plans are under way through which the coal may be dumped and loaded more economically. The company is considering utilizing only two tipples for the four mines at Minden. If that is done, the tipples and the openings at Mines Nos. 2 and 5 will no longer be used and all coal will be brought out through the openings at Mines Nos. 3 and 4 and dumped over the tipples now in use at those mines. It is thought probable that it will be necessary to enlarge both tipples.

The Clearwater Coal Co., is making rapid progress on the opening of its coal mine at Clearwater, according to C. W. Downs, general manager, who returned recently from an inspection of the operation. The location of the siding has been approved by the Western Maryland Ry. and work on it will be started at once. Connellsville men are chief stockholders in the company.

The Consolidation Coal Co. has purchased 200 acres of Pittsburgh coal in Harrison County from the Monongahela River R. R. Co., and from the Monongah Co., at a consideration said to be approximately \$128,000. The coal so purchased is on Lamberts Run near Hepzibah in Eagle District. Little time elapsed between the sale of about 256 acres of Pittsburgh coal land to W. Corrado of Connellsville and the purchase above described, consideration for such a sale made by the Consolidation being in the neighborhood of \$250,000. The sale made by the Consolidation was on May 18.

The Eastern Coal Mining Co., has completed negotiations for the purchase of the holdings and equipment of the Cheat Mountain Coal Co., on the line of the West Virginia Northern Ry., in Preston County. Howard and Edward Cross of Cumberland and F. E. Strickler of Kingwood were largely interested in the Cheat Mountain Co. Heading the purchasing company is A. A. Sommerville of Cumberland. In all about 75 acres were acquired in the deal.

Within recent weeks the E. E. White Coal Co. has installed new picking tables and other modern coal loading machinery at its plant at Glen White.

At least six coal associations in West Virginia and neighboring states have endorsed the Coal and Industrial Exhibition which will be held in Huntington, from Sept. 19 to 24, under the auspices of the Huntington Chamber of Commerce and are showing much activity in helping to make the coal exposition a success. Associations which are lending their hearty cooperation include the following: Logan Coal Operators' Association; Northeast Kentucky Coal Operators' Association; Virginia Coal Operators' Association; Tug River Coal Association; Kanawha Operators' Association; West Virginia-Kentucky Association of Mining, Mechanical & Electrical Engineers.

Negotiations have been consummated for the sale of 3,300 acres on the west bank of Simpson Creek, Pleasant District, Barbour County, by the Bear Mountain Coal Co., this acreage having been sold to two different purchasers, all with a view to early development. All but 1,000 acres were sold to the Cambria Coal Co., of Cleveland. B. P. Porter and associates of Cleveland purchased the other thousand acres. So far there has been no mining in either of the tracts sold but the Cambria Company is making preparations to drive openings and develop a part at least of its 2,300 acres with a view to beginning the shipment of coal during the fall months. In order to develop the coal acquired both interests are having two miles of railroad constructed to connect with what is known as the Astor branch of the B. & O.

The Chesapeake Coal Co., which is building a modern mining plant at Barrackville in Marion County, now has under construction a large tippie and belt conveyor, the latter to be 200 feet in length and to be used in bringing the coal from a hill-top to the tippie. Another company engaged in getting ready to operate at Barrackville is the LeMar Coal Co., which is sinking two shafts.

An unusually large scraper conveyor is being installed by the Delmar Fuel Co., at its Ruth Mine, located at Hildebrand in the Monongalia field. It will require some time to complete this work but it is hoped to have the appliance ready for operation by July 1. This conveyor is capable of handling about 300 tons of coal an hour.

Huntington and Danville, Va., capital will be invested in the development of a thousand acres of coal land near Huntington. The Morrill Coal Co. is being formed with \$1,000,000 capital. L. E. Conway of Danville will be president of the new mining company, and Charles W. Jones of Huntington will be vice president.

The H. T. Williamson Coal Co. has begun to mine and ship coal from its new plant in the Logan region. This company plans to increase its production.

Hereafter, the Har-Mar Coal Co. will be known as the Warner Collieries Co., this concern being owned by Warner & Co. of Cleveland who purchased the assets of the company some time ago. The Har-Mar Co. formerly operated what is known as the Nina mine at Madsville.

The Mountview Coal Co., newly organized, will operate in Kingwood district of Preston County, the company to have mines in the vicinity of Tunnelton. This concern is capitalized at \$50,000. Among those principally interested in the new concern are: F. W. Borgman, L. H. Borgman, James W. Borgman, Leo L. Borgman, of Tunnelton, W. Va., and J. Ben Brady of Kingwood, W. Va.

The Dolls Run Coal Co. is a new company in which Monongalia County and Pennsylvania capitalists are extensively interested, being capitalized at \$50,000. Coal lands in the Clay District of Monongalia County are to be developed, general offices of the company being at Morgantown, W. Va. Having an active part in forming this company were: R. D. Barrickman and David S. Brewer of Morgantown; C. M. Barrickman, of Cassville; Dominick Tropa of Star City, Pa.; B. H. Brewer, of Monaca, Pa.

With the election of George E. Myers as president of the Cameron Mining & Development Co., the preliminary organization of which was perfected a short time ago, this company has proceeded with development work and is now engaged in sinking a shaft near Cameron where the company will have its general headquarters.

An improvement made at the large by-product plant of the Domestic Coke Corporation at Fairmont has been the installation of a gas producer plant secured for the purpose of heating the ovens. There has been no resumption of operations at the plant so far because of dullness in the market, it is stated by C. V. Critchfield, vice-president of this concern.

WISCONSIN

The Northwestern Coal & Dock Co., is equipping its Connors Point, Superior, receiving dock with a screening plant.

The United Coal & Dock Co. is erecting a \$75,000 coal handling bridge at their South Water St. dock, near the entrance of Milwaukee harbor.

Traffic News

In a complaint to the I. C. C. the Republic Iron & Steel Co., of Youngstown, Ohio, attacks as unreasonable the rate of \$1.50 per ton on bituminous coal from Russellton, Pa., to Youngstown.

The Missouri & Illinois R.R., which is the new name given the old Illinois Southern road and which has recently changed hands and undergone other changes in equipment, etc., is now in regular operation. The roads run from Chester on the Mississippi River up through the coal fields of Randolph, Washington and Marion counties and terminates in Salem. The road carries coal from mines along its route to the main lines of the Illinois Central, the Chicago, Burlington & Quincy and other large carriers, to be shipped on to northern points.

The commission has dismissed by request of the company the complaint of the Sargeant Coal Co., which related to rates on coal from mines in the Booneville district of Indiana to points in Illinois, Wisconsin, Iowa and Minnesota.

The Tampa Gas Co., and the Key West Gas Co., both of Florida, have complained to the I. C. C. against unreasonable rates on foundry coke from Osaka, Va., to Tampa and Key West from Feb. 28 to Aug. 29, 1919.

Hearing scheduled by the I. C. C. at Birmingham for May 19 in the complaint of the Corona Coal Co. has been postponed to a date to be announced later.

In the case of the United Light & Railways Co., an I. C. C. examiner recommends

that the rates on bituminous coal from Jenkins, Ky., to Davenport, Muscatine, Ottumwa, Iowa City and Fort Dodge, Iowa, and from McRoberts, Ky., to Iowa City, be declared reasonable.

The Canadian Railway Commission has granted a 10 per cent reduction in the freight rates on coal from Alberta mines to the provinces of Manitoba, Saskatchewan and Alberta, effective June 1 and expiring on Aug. 21. Operators and dealers had asked for a cut of 20 per cent, but are satisfied with the concession. It is expected that the prices of soft coal in Winnipeg will be decreased between 40 and 50c. per ton as a result.

Further study of the order of the commission revising rates on coal shipped in interstate traffic to points in Minnesota, North and South Dakota, makes the situation denser and denser. The order may raise the rate from the docks to the Twin Cities still further, by perhaps 18c. Other revisions which are not in the line of reductions seem possible under the order.

Personals

C. A. Garner, formerly division engineer of the Lehigh Valley Coal Co. in the Hazleton Division, has resigned to take the position of mining engineer of the Markle Coal Co. at Jeddo.

W. A. Reutellhuber, formerly division engineer of the Centralia Division of the Lehigh Valley Coal Co. at Centralia has resigned to take the position of Superintendent of the colliery of the Darkwater Coal Co.

J. O. Gorman, formerly connected with the sales forces of the Kentenia Coal Sales Co., recently was appointed the Indiana representative of the Boone Coal Sales Co., the headquarters of which is in Cincinnati.

Bruce S. Davies of the mining engineers staff at the Wilkes-Barre office of the Lehigh Valley Coal Co. has been transferred to take the position of Division Engineer of the Hazleton Division.

R. Harlor of the mechanical engineers staff at the Wilkes-Barre office of the Lehigh Valley Coal Co. has been made division engineer of the Centralia Division.

M. L. Fetterman, formerly mining engineer of the Buck Ridge Coal Co. of Shamokin, has resigned and accepted a position on the mining engineers staff of the Lehigh Valley Coal Co. at Wilkes-Barre, Pa.

Hayden Owens, formerly on the staff of the division engineer of the Susquehanna Division of the Lehigh Valley Coal Co. has been transferred to the mining engineers staff at the Wilkes-Barre office.

Robert Hager, president of the Hager Coal Co., has returned to Cincinnati after a two weeks tour of Michigan. While in Lansing, he met with Governor Groesbeck, who is a member of the state commission that has charge of a central agency for the purchase of coal for state institutions.

L. R. Reese and F. W. McCullough, president and vice-president of the Buffalo-Thacker Coal Co., of Huntington, W. Va., have been visiting the offices of their New York selling subsidiary company, the Buffalo Coal & Export Corporation.

T. L. Irvine spoke on the destination weighing of coal at a conference at the Bureau of Standards with superintendents of weights and measures.

John H. Beasley, an attorney of Terre Haute, Ind., has been named state agent of the Harlen Coal Co., a Kentucky corporation, which recently qualified to do business in Indiana.

Captain W. H. Morris, one of the pioneer coal operators of the Brazil Block coal field of Indiana, but now of Colorado Springs, recently visited in Brazil.

The Governor of Pennsylvania has announced appointment of the following as the first members of the anthracite mine inspector's candidate examining board: **George M. Keiser**, Pottsville; **Thomas Thomas**, Dorranceton; **George Morrell**, Coaldale; **John Griffiths**, Scranton, and **M. H. Quinnan**, Pittston. The board was named under recently approved legislation.

Operators are taking advantage of the slack working period at the present time to make tours of inspection at the various mines throughout Illinois. Recently a party of officials composed of **Harry J. Meehan**, vice president of Cosgrove & Co., and president of the Ernest Coal Co., **Enoch Carver** and **F. T. Fritzharis**, general sales manager and chief engineer respectively of Cosgrove & Co., visited the mines owned by the company in Williamson County and also some in Marion County. **T. H. Cochran**, president of the Harrisburg Coal Mining Co., with headquarters in Chicago, with a party of coal men recently visited mines owned by that company in Saline County.

Harry A. Lawrence, formerly general sales manager of the Union Colliery Co., of St. Louis, has accepted a similar position with Newsam Brothers Coal Co., Old Colony Bldg., Chicago.

J. B. Burkhardt, general superintendent of the Security Coal & Mining Co., DuQuoin, Ill., is spending a few weeks vacation at Hot Springs, Ark.

Joseph Petri of Belleville, Ill., has been appointed as county mine inspector of St. Clair County for the coming term, succeeding Thos. Simpson.

T. S. Cousins, general superintendent of the two mines of the Equitable Coal & Coke Co., of Chicago, located at Johnston City and Clinch, Ill., has returned to his duties after a two weeks vacation at Oakville, Ill.

M. L. Hudson, of Chicago, representing the Edward Hines interests of that city was a recent visitor in the Fairmont region making the trip to Marion county, W. Va., for the purpose of inspecting the firm's mining property.

A recent visitor in Charleston was **Colonel T. E. Houston** who has extensive holdings on the Norfolk & Western in Southern West Virginia.

J. M. Wright of Cincinnati, president of the Raleigh Coal & Coke Co., in company with **A. A. Liggett** secretary of the company were in Raleigh County, W. Va., recently, inspecting the properties of the company at Raleigh. This company is extending its operations in the Raleigh County field.

A. R. Armstrong has resigned as resident manager of the Holdred Collieries Co., at Blair, W. Va., and has returned to his former home in Canada. Mr. Armstrong was manager at Blair for a period of about six years.

A visitor in the Fairmont region during the latter part of May was **T. H. Johnson**, of Bellaire, Ohio, president of the Chesapeake Coal Co., which has an operation in the Marion field.

A visitor in the New York market during the latter part of May was **Charles F. Sutherland** of the Sutherland Coal Co., Mr. Sutherland is also the Mayor of Morgantown, W. Va.

The Morgantown Coal Co., was represented in the Buffalo and Cleveland markets late in May by **M. L. Taylor**, vice-president of the company.

A. A. Sommerville of Cumberland, Md., has been elected president of the Eastern Coal Mining Co., of Cumberland, which recently acquired extensive holdings in Preston County, W. Va.

Industrial News

Minneapolis, Minn.—The Philadelphia & Reading Coal Co., which for years has maintained a retail office on the main floor of the Lumber Exchange, has moved it to the floor above, where the wholesale office has been located.

New York, N. Y.—The local office of the Jeffrey Manufacturing Co. is now located

at 30 Church St., Hudson Terminal Bldg., in charge of Harold B. Wood.

Philadelphia, Pa.—The Combustion Engineering Corp. has increased its office space and is now located on the tenth floor, Finance Bldg., under the management of W. C. Stripe.

Pittsburgh, Pa.—The Iron Trade Products Co. has opened a new branch office in the Pennsylvania Bldg., Telephone 5611; in charge of A. Girard Foote, resident manager.

Washington, D. C.—Arthur Hale, formerly with the American Railway Association, has opened a local office and will act as agent and attorney for railroads.

Obituary

William A. Todd, chief shipper of the H. C. Frick Coke Co., and one of Scottsdale's best-known citizens died recently. Mr. Todd came to Scottsdale as timekeeper for Collins Brothers, contractors, in 1872 when the Southwest branch of the Pennsylvania was being constructed.

Nelson A. Rist, 70 years old, widely known in the coal and coke industries in Western Pennsylvania and West Virginia, and a former resident of Dawson, died suddenly at his home at Tucson, Ariz. Mr. Rist was largely interested in the West Virginia coal fields and was a director of the Fink Coal & Coke Co., and Little Kanawha Coal & Coke Co., holders of large acreages in Gilmore and adjoining counties.

Colonel Thomas Curtis Clarke, a noted engineer in the coal and coke industry, and commander of the 110th Engineers, Thirty-fifth Division, during the late war, died suddenly from pneumonia at New York, in his forty-eighth year.

Association Activities

Buffalo Bituminous Coal Association

The annual meeting of the association was held on May 13, at which J. Bert Ross was elected president, J. T. Roberts, vice-president and John Adema, R. H. Davison and T. M. Byrne, with the officers, directors. W. E. McCollum was appointed secretary-treasurer by the Board. President Ross was selected to represent the Association at the annual meeting of the National Association and former president W. D. Ward, to look after the association's interests on the ways and means committee of the Buffalo Chamber of Commerce, of which committee he is a member.

Cincinnati Coal Exchange

The exchange has had under consideration for several months past a series of meetings of the members in the way of a monthly get-together meeting. Recently, without very much preparation, the first of these was held. The speakers were supplied by the local chapter of the National Association of Credit Men and included Charles W. Dupuis, president of the Citizen's National Bank, R. M. Atkins, vice president and in charge of credits for the Proctor and Gamble Co., and G. L. Gruen of the Gruen Watch Co. All three related what was being done regarding the interchange of credit information between various trades and the coal men were asked to cooperate. Other meetings of this character will be held throughout the summer.

Colorado Retail Coal Dealers' Association

Delegates to the convention of the association, held in Fort Collins were urged by W. W. Curtis, an operator of Colorado Springs, to buy coal to the extent of their financial ability, without delay, as a matter of public duty. He predicted that coal will be scarce next winter and prices high.

F. B. Choate, assistant general freight agent of the Union Pacific R.R., who also addressed the delegates, said there is virtually no storage coal in the West at present, due to a falling market, the money stringency and agitation for lower freight rates. He said there are 450,000 freight cars idle at present.

President Charles A. Lory of the Colorado Agricultural College made a plea

for the American spirit in business and for freedom from too much government restraint and regulation.

W. L. Anderson of Pueblo was elected as president to succeed Charles McMillan of Fort Collins. Others elected for the ensuing year: Thomas Owens, Denver, first vice-president; W. Hagan, Colorado Springs, second vice-president; E. H. Peterson, Denver, treasurer; J. H. Hamilton, Alamosa, secretary. The directors are John Harvey, Leadville; G. H. Clendenen, Denver; R. J. Belcher, Pueblo; Ross M. Lambdin, Gunnison; A. P. Smith, Denver; W. Carey Cook, Fort Collins, and H. C. Harmon, Colorado Springs.

Smokeless Coal Operators' Association of West Virginia

The association held a largely attended meeting during the recent annual convention of the national association in New York, the principal matter discussed at the meeting being the application of the Ohio railroads to the Interstate Commerce Commission for a flexible differential against West Virginia. The present differential, based on the 1917 decision, is 40c., but the Ohio roads claim that as the present rates have at least doubled since 1917, that the differential should be 80c. In other words, they contend that as rates go up the differential should be widened. The smokeless people instructed their secretary, E. J. McVann, to protect their interests.

The following companies were admitted to membership in the association: Litz-Smith Coal Co.; Rhodell Coal Co.; Wood-Peck Fuel Co.; Wilton Smokeless Coal Co.; Monticello Smokeless Coal Co.; Imperial Colliery Co.

West Virginia Coal Association

J. G. Bradley, of Dundon, president of the Elk River Coal & Lumber Co., who was elected president of the National Coal Association was also re-elected as president of the West Virginia Coal Association, it being his fourth term in such a capacity. The annual meeting of the association was held during the three-day annual meeting of the National Coal Association. Other officers elected were Everett Drennen of Elkins, president of the West Virginia Coal & Coke Co., as vice-president; W. H. Cunningham of Huntington, as secretary; A. H. Land, of Charleston as treasurer.

At the meeting at which officers were elected, the freight rate problem which is of a good deal of interest was discussed from all angles by the assembled membership.

Coming Meetings

American Institute of Mining and Metallurgical Engineers will meet at Wilkes-Barre, Pa., Sept. 12 to 17. Secretary, Bradley Stoughton, 29 West 39th St., New York City.

Michigan-Ohio-Indiana Coal Association will hold its annual meeting June 15, 16 and 17 at Cedar Point, Ohio. Secretary, B. F. Nigh, Brunson Bldg., Columbus.

National Association of Cost Accountants will hold its annual convention at Cleveland, Ohio, Sept. 14, 15 and 16. Secretary, S. C. McLeod, 130 West 42d St., New York City.

Rocky Mountain Coal Mining Institute will hold its summer meeting beginning June 28 at Salt Lake City, Utah. Secretary, F. W. Whiteside, Denver, Col.

Mine Inspectors' Institute of America will hold its twelfth annual meeting at Charleston, W. Va., July 12 to 15. Secretary J. W. Paul, Bureau of Mines, Pittsburgh, Pa.

Illinois and Wisconsin Coal Dealers' Association will meet at Chicago, Ill., July 13 and 14.

American Society for Testing Materials will hold its annual meeting at the New Monterey Hotel, Asbury Park, N. J., June 20 to 24. Secretary, C. L. Warwick, 1315 Spruce St., Philadelphia, Pa.

The American Mining Congress and National Exposition of Mines and Mining Equipment. The twenty-fourth annual convention on Oct. 17 to 22 at the Coliseum, Chicago, Ill. Assistant secretary, John T. Burns, Congress Hotel, Chicago, Ill.

American Institute of Chemical Engineers will hold its spring meeting, June 20 to 24 at Detroit, Mich. Secretary, Dr. J. C. Olsen, Polytechnic Institute, Brooklyn, N. Y.